

# **HIV in Kansas**

## **Integrated Epidemiological Profile: An Analysis of the HIV Epidemic in Kansas from 2013 – 2017**



**STI/HIV Surveillance Program  
STI/HIV Section  
Bureau of Disease Control and Prevention  
Kansas Department of Health and Environment**

Sources of information for this report:

Kansas HIV Surveillance System (eHARS)  
Kansas Integrated Surveillance and Case Management System (EpiTrax)  
Kansas Ryan White Database (SCOUT)  
Kansas Information for Communities (KIC)  
ArcGIS Online

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Disclaimer: There may be a difference from previously reported data, due to data cleaning efforts.

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*The Mission of the STI/HIV Section is to stop the spread of STIs & HIV in Kansas*

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## *Acronym List*

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ADAP: AIDS Drug Assistance Program

AIDS: Acquired immunodeficiency syndrome

ART: Anti-retroviral Therapy

BDCP: Bureau of Disease Control & Prevention (KDHE)

CAC: Community Advisory Council

CARE: [Ryan White] Comprehensive AIDS Resources Emergency Act

CBO: Community Based Organization

CDC: Centers for Disease Control & Prevention

CRCS: Comprehensive Risk Counseling Services

CT: Counseling and Testing

DIS: Disease Intervention Specialist

DHAP: Division of HIV/AIDS Prevention (CDC)

Dx: Diagnosis

eHARS: Enhanced HIV/AIDS Reporting System (Surveillance Database)

FDA: Federal Drug Administration

FOA: Funding Opportunity Announcement

FPL: Federal Poverty Level

GRID: Gay-Related Immune Disease

HIV: Human Immunodeficiency Virus

HOPWA: Housing Opportunities with Persons with AIDS

HRSA: Health Resources & Services Administration

HSI: Healthcare Strategies Initiates

HUD: United States Department of Housing and Urban Development

ICD: International Classification of Diseases

IDU: Injection Drug User

KAR: Kansas Administrative Regulations

KCTH: Kansas Care Through Housing

KDHE: Kansas Department of Health & Environment

KHEL: Kansas Health & Environment Laboratories

KIC: Kansas Information for Communities

KLWH: Kansans Living with HIV

KNDF: Kansas Notifiable Disease Form

KSA: Kansas Statutes Annotated (State Statutes)

LTC: Linkage to Care

MCM: Medical Case Manager

MMWR: Morbidity and Mortality Weekly Report

MSM: Gay, bisexual, and other men who have sex with men

MSM/IDU: Men who have sex with men and engage in injection drug use

NCHHSTP: National Center for HIV/AIDS, Viral Hepatitis, STI, & TB Prevention (CDC)

NDI: National Death Index

NICK: Not in Care in Kansas Program

NIR: No Identified Risk

NRR: No Risk Reported

OI: Opportunistic infection

OVS: Office of Vital Statistics

PEP: Post Exposure Prophylaxis

PLWA: People living with AIDS

PLWH: People living with HIV

PrEP: Pre-Exposed Prophylaxis

PS: Partner Services

RIDR: Routine Interstate Duplicate Review

RSR: Ryan White HIV/AIDS Program Services Report

SCOUT: Securing Client Outcomes Using Technology (Care Database)

SSDMF: Social Security Death Master File

STI: Sexually Transmitted Infection

TB: Tuberculosis

TGA: Transitional Grant Area

VA: Veterans Administration Hospital

WHO: World Health Organization

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## *Executive Summary*

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The state of Kansas is primarily an agricultural and rural-based state, with the exception of the three major metropolitan areas; Wichita, Kansas City, and Topeka. Kansas' general population is predominantly white (77%), with 50% of the estimated 2,913,123 population to be within the age range of 25-64.

In 2014, CDC released an updated HIV case definition in the Morbidity and Mortality Weekly Report (MMWR). In an attempt to stop stigmatization, CDC is using stage classification rather than HIV/AIDS. If an individual is HIV-positive and has been diagnosed with an identified opportunistic infection or has a CD4 count below 201, that person is defined as Stage 3 (previously defined as AIDS).

On average, 131 people annually are newly diagnosed with HIV in Kansas. As of December 31, 2017 there were a total of 2,927 persons known to be living with HIV in the state of Kansas. Approximately 79% of all counties in Kansas have persons living with HIV. The three metropolitan areas represent 74% of the Kansas HIV epidemic.

The majority of people living with HIV in Kansas are male, Non-Hispanic, men who have sex with men (MSM) and between the ages of 40 and 59 years of age. However, men of color are disproportionately affected by the disease.

The proportion of newly diagnosed HIV-positive person who were diagnosed with Stage 3 concurrently or within 12 months of their initial HIV diagnoses has decreased significantly, with consecutive declines over the past 5 years. In 2008, more than 50% of newly diagnoses patients were Stage 3 or progressed to Stage 3 within a year while approximately 25% of newly diagnosed HIV patients in 2017 progressed to Stage 3.

Despite a decrease in funding for KDHE-funded HIV Counseling and Testing sites (CT), Calendar Year 2014-2017 yielded a higher percent positive than in previous years. This can be attributed to non-healthcare sites providing more targeted testing in their respective areas.

The Continuum of Care identifies the major milestones that an HIV-positive person goes through in an attempt to reach the ultimate goal of viral suppression. The stages that Kansas chose to identify for the Continuum of Care are "diagnosed and living in Kansas", "linked to care", "receipt of care", "retained in care", and "virally suppressed". A tool like the Continuum of Care demonstrates where improvements in medical care and prevention are still needed. As of December 2017, 76.4% of HIV-positive persons living in Kansas were virally suppressed, compared to 49% nationally as of July 2017 (the most recent year for which national data is available).

In 2015, the Centers for Disease Control and Prevention (CDC) released new treatment guidelines. The updated guidelines discuss alternative treatment regimens for *Neisseria gonorrhoeae*, the management of persons who are transgender, and retesting to detect repeat infections. Chlamydia is the most frequently reported STI in Kansas with 13,549 cases reported in 2017. In 2017, there were 4,545 gonorrhea cases reported and 330 cases of early syphilis reported.

During 2013-2017, a total of 200 persons were diagnosed with tuberculosis (TB), 2% (4) of these cases had co-morbidity with HIV.

# Background

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## ***Kansas HIV Surveillance***

The Kansas Department of Health & Environment (KDHE) began monitoring the disease known as Acquired Immunodeficiency Syndrome (AIDS) in 1983. On July 1, 1999, the Kansas statutes requiring confidential name-based HIV reporting were passed into law. All HIV cases diagnosed or treated in the state of Kansas were made reportable to KDHE's STI/HIV Section housed in the Bureau of Disease Control and Prevention (BDPC). Kansas Law (K.S.A. 65-6002) requires all physicians and laboratories to report all cases of HIV infection within 30 days and for laboratories to report CD4+ T-lymphocyte counts less than 500/ $\mu$ l and/or CD4+ T-lymphocytes less than 29% of total lymphocytes (K.A.R. 28-1-18).

Kansas has nine (9) defined HIV Regions that are used for surveillance and community planning purposes. Regions 1 and 2 are a part of the Kansas City Transitional Grant Area (TGA). The TGA consists of four counties in the State of Kansas, and seven counties in the State of Missouri.

## ***KDHE's STI/HIV Section***

BDPC houses the STI/HIV Section, Disease Intervention Section, and the Tuberculosis/Immunization (TB/IMM) Section. The STI/HIV Section includes HIV Surveillance, HIV Prevention, and Ryan White Part B Programs. The STI/HIV Section and the Disease Intervention Section are fully integrated allowing for information sharing and data sharing across the two sections.

### **STI/HIV Prevention Program**

The Prevention Program receives federal funding provided by the CDC to support HIV prevention activities in the following areas: STI/HIV testing, prevention with positives, condom distribution, policy initiatives, jurisdictional planning, technical assistance and capacity building, and monitoring and evaluation.

### **STI/HIV Surveillance Program**

The Surveillance Program monitors the HIV epidemic in Kansas, analyzes trends in infection, and provides accurate information for planning of prevention and care activities. HIV case reports are sent directly to KDHE by doctors, hospitals, and laboratories. These reports are processed by the Surveillance Program and analyzed to assist with resource planning for the Prevention and Care Programs.

### **STI/HIV Care Program**

The Care Program uses Ryan White Part B and AIDS Drug Assistance Program (ADAP) funding provided by the Health Resources and Services Administration (HRSA) to provide care for persons living with HIV infection who are not eligible to receive medical care through other public or private sources. The program, in coordination with the Ryan White Part A, C, D, and F grantees, assures that all Kansans living with HIV have access to the resources to monitor and treat their infection, in order to achieve the highest quality of life possible. The Care

Program is responsible for administration of Part B and AIDS Drug Assistance Program (ADAP) activities. Part B funds are to be accessed only when no other support is available, serving as the payer of last resort. Additional services provided through the Care Program include: medical case management (MCM), Housing Opportunities for Persons with AIDS (HOPWA), dental care services, mental health, and substance abuse services through the HOPWA program.

### **Disease Intervention Section**

The Disease Intervention Section intervenes in the spread of Sexually Transmitted Infections (STIs) by providing treatment and partner services for diagnosed syphilis and HIV cases. Through Partner Services (PS), Disease Intervention Specialist (DIS) work with infected patients to identify partners and other contacts in need of testing and treatment of these infections. Education for both patients and providers are provided by the DIS, including current STI information, prevention, and the most up-to-date treatment protocols. The eleven DIS in Kansas also work to change individual patient risk behavior through evidence-based interventions with the goal of reducing the amount of disease in Kansas.

### ***A Quick History of HIV***

**Early 1980's:** During the early days of the epidemic; what was originally called GRID (Gay-Related Immune Deficiency) seemed to only target men who have sex with men (MSM) and injection drug users (IDU). These individuals were contracting opportunistic infections (OIs) that were previously unseen.

**1983:** CDC released a MMWR report naming the new disease “Acquired Immune Deficiency Syndrome” (AIDS), and confirming that the disease was due to a virus found in the blood of an infected person.

KDHE started the AIDS Surveillance Program to monitor the spread of disease in Kansas.

**1985:** Ryan White, a 13-year old hemophiliac with AIDS was banned from school.

**1986:** CDC and other medical providers start to use the term: Human Immunodeficiency Virus (HIV).

**1987:** The first anti-retroviral therapy (ART) was approved by the Food and Drug Administration (FDA).  
CDC revised the case definition of HIV/AIDS; HIV is now classified as the infection, and AIDS is considered a late stage of HIV.

**1990:** Ryan White died, prompting congress to pass the Ryan White CARE Act to assist HIV-positive persons and their families with core and supportive services.

**1992:** CDC revised the HIV/AIDS case definition; the AIDS defining opportunistic infections (OIs) list was updated to include diseases seen in HIV-positive women and injection drug users (IDUs). The case definition also included the use of low CD4 counts (<200 uL).

- 1998:** Post Exposure Prophylaxis (PEP) is created.
- 1999:** The State of Kansas requires confidential name-based reporting for all HIV/AIDS laboratory tests. Tests include low CD4 (<500  $\mu$ L count and/or <29%  $\mu$ L), viral loads, screening and confirmatory testing.
- 2000:** CDC reported for the first time, Black/African American and Hispanic MSM have higher rates of infection nationwide when compared to White MSM.
- 2002:** The first rapid HIV test was FDA approved.
- 2006:** The first “once daily” oral HIV treatment was FDA approved.
- CDC released new guidelines stating that anyone who was sexually active should go to their medical provider for routine HIV testing.
- 2010:** The World Health Organization (WHO) released its revised editions of the antiretroviral treatment guidelines for adults & adolescents, and for preventing mother-to-child transmission.
- 2012:** The FDA approved an antiretroviral drug combination for Pre-Exposed Prophylaxis (PrEP).
- KDHE combines the STI and HIV sections to facilitate better information sharing practices, teamwork and to provide effective and efficient services for HIV-positive persons in Kansas.
- 2013:** President Obama established the HIV Care Continuum Initiative.
- 2014:** CDC revised the HIV/AIDS case definition to identify stage classification (0,1,2, or 3) rather than HIV/AIDS.
- Stage 0 - acute infection (<180 days since previously negative HIV test),
  - Stages 1 and 2 - HIV infection (CD4 levels determine stage),
  - Stage 3 - replaces the term AIDS (low CD4 and/or diagnosed OI)

## *About the Epidemiological Profile*

This epidemiological profile provides detailed information about the current HIV epidemic in Kansas. Data from the STI/HIV Surveillance Program and multiple other sources were utilized to create this document. The epidemiological profile assists KDHE and community planning members in identifying HIV prevention and care needs, existing resources, barriers, and gaps within Kansas in order to formulate strategies to address them.

This edition of the Kansas Epidemiological Profile will concentrate on trends and analysis from January 1, 2013 – December 31, 2017. This edition will be the second time that Kansas is able to provide a comprehensive analysis of both STI and HIV data together in the same document.

Please refer to the KDHE STI/HIV Surveillance website to view the HIV bi-annual data tables. The HIV bi-annual data tables reflect the incidence and prevalence for the state of Kansas, and HIV regions for the identified portion of a given calendar year.

[http://www.kdheks.gov/sti\\_hiv/hiv\\_std\\_update.html](http://www.kdheks.gov/sti_hiv/hiv_std_update.html)

STI bi-annual statistics can be found by visiting the KDHE STI/HIV Surveillance website. Data can be viewed by case counts and case rates.

[http://www.kdheks.gov/sti\\_hiv/sti\\_reports.htm](http://www.kdheks.gov/sti_hiv/sti_reports.htm)

## *Guidelines to reading the Epidemiological Profile*

The following guidelines are intended to facilitate proper interpretation of the tables and figures presented in this profile:

1. **Carefully examine the entire table or graph.** Read the title and look closely at the type of information presented on the axis. The axis may be presented in total numbers or in percentages. Look at the scales used for each of the axis. Review the time frame the graph is covering. Make sure to read the analysis given to see if any data has been excluded, for example: tables, and graphs may represent incidence data (newly diagnosed cases within a calendar year) or prevalence data (all HIV-positive persons living in Kansas).
2. **These data have certain limitations.** HIV named reporting in Kansas wasn't required by law until July of 1999. Prior to this, the number of persons reported is relatively small and may not be representative of all infected persons. HIV Surveillance Data is reliant on timely reporting practices from health entities and laboratories, and this may not always occur.
3. **Be cautious of small numbers.** Small changes or differences from year to year are expected. Due to the low number of cases in Kansas, comparing data from one year to the next can be complicated and may not be reflective of actual trends. Any significant changes will be noted in the analysis that accompanies tables, graphs, and/or charts.

4. **Find patterns in the data sources.** Different findings should be examined carefully. All data sources are not equivalent in their generalizability. All studies should be examined for their purposes, populations studied and limitations.
5. **Case-Based vs. Person-Based Analysis.** All public health and medical data, including HIV, can be examined in two different formats; case-based and person-based. A case-based analysis counts the number of disease cases present. In this way a client could be counted once for being in the HIV-positive category and a second time for being Stage 3. A person-based analysis counts the client as a single entity, regardless of the stage or level of disease they have. In this way a client is only ever counted once, regardless of the stage of disease. In this publication, HIV will be illustrated in both formats. STI's will only be illustrated in the case-based format.
6. **Small numbers are tricky.** Data release limitations are set to ensure that the information cannot be used to inadvertently identify an individual. In Kansas, certain datasets that contains a cell size less than 5, and could result in the data being identifiable cannot be released. Take caution when looking at graphs, charts and/or tables due to this constraint.

## **Data Sources**

Data were compiled from a variety of sources to provide a complete picture of the HIV epidemic in Kansas. When interpreting the data, keep in mind that each of the data sources has strengths and limitations. A brief description of each data source is provided below.

### **HIV Surveillance Data**

Standardized adult and pediatric case report forms are used to collect demographics, vital status, laboratory and clinical results, as well as risk factor information on all cases. All laboratories performing HIV tests for Kansas residents are required to report positive HIV results, indeterminate results, CD4 counts, and Viral Load values to KDHE. All surveillance data are entered into the Kansas electronic HIV/AIDS Reporting System (eHARS), the HIV surveillance database developed and required by CDC.

### **Ryan White Care Data**

The Ryan White Part B Program in Kansas utilizes the SCOUT database (hosted by Healthcare Strategic Initiatives (HSI)) to collect client-level data. SCOUT is used for all data collection and reporting operations of the Ryan White Part B and ADAP programs. SCOUT was implemented in March 2011, replacing the FACTORS database previously utilized for data collection.

### **Sexually Transmitted Infection (STI) and Tuberculosis (TB) Surveillance**

Providers utilize the Kansas Notifiable Disease Form (KNDF) to collect demographics, laboratory results, and treatment information to report to KDHE as required by state statute. All laboratories performing chlamydia, gonorrhea, and syphilis testing in Kansas are required to report positive laboratory results to KDHE. Data collected is inputted into the EpiTrax integrated disease surveillance database, which helps to identify co-

morbidities and trends in other sexually transmitted infections. EpiTrax was implemented in March 2012, replacing the STD\*MIS database previously utilized for data collection.

The EpiTrax database is also what the Tuberculosis (TB) Program uses to track their data.

### **Counseling and Testing in Kansas**

Counseling and Testing (CT) sites are required to enter all information for HIV testing events provided by KDHE into EvaluationWeb, the reporting database utilized by CDC. Data collected includes demographic, test results, risk factors, and linkage to care referral information.

### **Vital Statistics Data**

The Office of Vital Statistics (OVS) collects information on all births and deaths that occur in Kansas. Vital statistics information is obtained on all reported cases by matching with birth and death certificate databases. These databases also assist in identifying perinatal exposures from birth certificates.

The National Death Index (NDI) and the Social Security Death Master File (SSDMF) are national databases that state Surveillance Programs match with annually through CDC funding to ascertain vital status of HIV-positive persons.

### **Population Data**

The U.S. Census Bureau collects and disseminates population estimates for states and counties every ten years. The data consists of demographic, economic and household characteristics of the population.

The U.S. Bureau of Labor Statistics collects and disseminates estimates regarding the economy, employment status, and poverty levels. The data utilizes population data collected from the U.S. Census Bureau.

The Kansas Information for Communities (KIC), collects Kansas statistics on a number of topics (including birth, death, population estimates, pregnancy, poverty, etc.). KIC allows users to create tables based on gender, race/ethnicity, county of residence, age, etc. within chosen timeframes.

### **Disclaimers**

There may be differences from previously reported data due to significant data cleaning efforts.

Due to rounding, percentages may not add to 100% for all graphs and tables.

The purpose of this publication is to illustrate STI/HIV health related conditions within the State of Kansas. This product may be corrected or updated as necessary without prior notification.

The originating agencies are not responsible for publication or use of this product for purposes other than those expressed.

Except for the limited purposes allowed in K.S.A. 21-3914, knowingly selling, giving, or receiving any list of names, addresses, or maps contained in or derived from public records is a crime.

## *Part 1: Kansas Statistics*

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*A snapshot of the general population of Kansas*

## *Kansas Statistics Section Highlights*

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- Kansas is primarily an agricultural and rural-based state with exception to three major metropolitan areas; Wichita, Kansas City, and Topeka.
- Kansas has a population estimate of 2,913,123 people. The population is predominantly White (77%), with 50% of the population within the age range of 25-64 years of age.
- Kansas residents' median household income is \$56,422.
- The most recent poverty rate for Kansas is 13.3%.
- 90.1% of the general population in Kansas have health insurance.

## Description of Kansas's Population

Kansas is an agricultural state with a total land area of 81,815 square miles. According to Kansas Information for Communities, Kansas had a population estimate of 2,913,123 persons in 2017. The boundaries of Kansas form a nearly perfect rectangle around 105 counties, which range in population sizes from Greeley County with an estimated population of 1,249 persons to Johnson County with an estimated population of 591,178 persons. Kansas has three major metropolitan areas: Kansas City (Wyandotte and Johnson Counties); Wichita (Sedgwick County); and Topeka (Shawnee County).

This section will use internal data from Kansas Information for Communities (KIC) when available and supplement it by using U.S. Bureau Census data and its affiliated programs (i.e. American Community Surveys). Additional external studies will be mentioned throughout to assist in the interpretation of the presented data and graphs. KIC has several advantages to analyzing the overall makeup of the Kansas population, such as more accurate estimates of minority populations. The U.S. Census data is utilized in this report when a micro analysis is needed to reach a better understanding of the living conditions Kansans are undertaking.

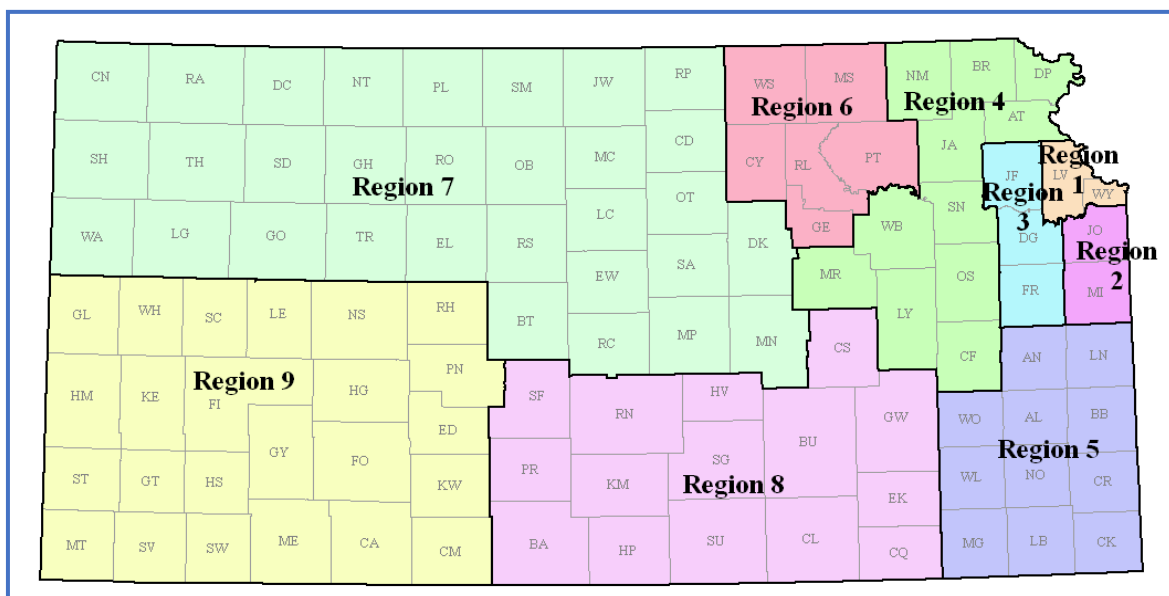
### *Kansas Community Planning Group Regional Structures*

The State of Kansas has been divided into nine regions for surveillance and public health planning purposes. These regions have neither similar geography nor population size. They range in size from 31 counties (Region 7) to two counties (Regions 1 and 2). Table 1 shows the nine Kansas HIV Regions, the most urban city found in that region, and the regional Ryan White Service provider, while Figure 1 displays each region on the Kansas map.

**Table 1: HIV Regions Found in Kansas**

|                 | Urban City                    | Ryan White Service Provider                   |
|-----------------|-------------------------------|---|
| <b>Region 1</b> | Kansas City Metro Area        | TGA   |
| <b>Region 2</b> | Kansas City Metro Area        | TGA   |
| <b>Region 3</b> | Lawrence                      | Heartland Community Health Center             |
| <b>Region 4</b> | Topeka                        | Positive Connections & KDHE LTC               |
| <b>Region 5</b> | Pittsburg                     | Crawford County Health Department             |
| <b>Region 6</b> | Manhattan                     | Positive Connections                          |
| <b>Region 7</b> | Salina                        | Saline-Salina County Health Department        |
| <b>Region 8</b> | Wichita                       | UKSM-W Midtown, Positive Directions, KDHE LTC |
| <b>Region 9</b> | Outreach Clinics from Wichita | UKSM-W Midtown                                |

**Figure 1: Map of the Kansas HIV Regions**



As shown in Table 2, Region 8 contains the largest proportion of the state's population (26.8%), and Region 6 contains the smallest (5.3%). The range in the number of counties per region is due to the dramatic differences in population density throughout the state. This interesting mix of land mass and extremes in population density poses a major challenge in creating health education programs and providing primary-HIV medical care for the citizens of Kansas.

**Table 2: Kansas Population Estimates by HIV Region, 2017**

|  | Regional Population Estimate | Percentage of State Population |
|--|------------------------------|--------------------------------|
| <b><i>Region 1: Kansas City</i></b>      | 246,383                      | 8.5%                           |
| <b><i>Region 2: Kansas City</i></b>      | 624,639                      | 21.4%                          |
| <b><i>Region 3: Lawrence</i></b>         | 165,524                      | 5.7%                           |
| <b><i>Region 4: Topeka</i></b>           | 305,040                      | 10.5%                          |
| <b><i>Region 5: Pittsburg</i></b>        | 184,519                      | 6.3%                           |
| <b><i>Region 6: Manhattan</i></b>        | 155,123                      | 5.3%                           |
| <b><i>Region 7: Salina</i></b>           | 283,763                      | 9.7%                           |
| <b><i>Region 8: Wichita</i></b>          | 782,096                      | 26.8%                          |
| <b><i>Region 9: Outreach Clinics</i></b> | 166,036                      | 5.7%                           |

Table 3 is a chronological history of population sizes in Kansas by county beginning in 1997. The most substantial increases in population size over the last 20 years occurred in Johnson County, where the population increased by 169,674 people, and Sedgwick County, with an increase of 74,433. The two counties with the largest decline in population size since 1997 are Montgomery County (-4,431) and Labette County (-3,047). Overall, the population in Kansas has increased by 277,026 people over the last 20 years.

**Table 3: Estimate Populations for Kansas by County (1997-2017)**

|                   | <b>1997</b> | <b>2002</b> | <b>2007</b> | <b>2012</b> | <b>2017</b> | <b>Difference</b> |
|-------------------|-------------|-------------|-------------|-------------|-------------|-------------------|
| <b>Allen</b>      | 14,500      | 14,110      | 13,545      | 13,319      | 12,519      | -1,981            |
| <b>Anderson</b>   | 8,047       | 8,143       | 8,040       | 7,917       | 7,833       | -214              |
| <b>Atchison</b>   | 16,774      | 16,823      | 16,864      | 16,813      | 16,332      | -442              |
| <b>Barber</b>     | 5,451       | 5,088       | 4,927       | 4,861       | 4,586       | -865              |
| <b>Barton</b>     | 28,950      | 27,684      | 27,492      | 27,557      | 26,476      | -2,474            |
| <b>Bourbon</b>    | 15,529      | 15,200      | 15,038      | 14,897      | 14,754      | -775              |
| <b>Brown</b>      | 10,970      | 10,373      | 10,036      | 9,881       | 9,641       | -1,329            |
| <b>Butler</b>     | 58,038      | 60,473      | 64,213      | 65,827      | 66,878      | 8,840             |
| <b>Chase</b>      | 3,024       | 3,008       | 2,840       | 2,757       | 2,683       | -341              |
| <b>Chautauqua</b> | 4,434       | 4,183       | 3,757       | 3,571       | 3,363       | -1,071            |
| <b>Cherokee</b>   | 22,810      | 22,185      | 21,896      | 21,226      | 20,115      | -2,695            |
| <b>Cheyenne</b>   | 3,181       | 3,033       | 2,810       | 2,678       | 2,683       | -498              |
| <b>Clark</b>      | 2,466       | 2,372       | 2,200       | 2,181       | 2,004       | -462              |
| <b>Clay</b>       | 9,005       | 8,607       | 8,527       | 8,531       | 7,958       | -1,047            |
| <b>Cloud</b>      | 10,494      | 9,948       | 9,525       | 9,397       | 8,991       | -1,503            |
| <b>Coffey</b>     | 8,841       | 8,784       | 8,542       | 8,502       | 8,224       | -617              |
| <b>Comanche</b>   | 2,043       | 1,956       | 1,841       | 1,913       | 1,790       | -253              |
| <b>Cowley</b>     | 37,097      | 36,680      | 36,148      | 36,288      | 35,361      | -1,736            |
| <b>Crawford</b>   | 37,937      | 38,330      | 38,922      | 39,361      | 39,034      | 1,097             |
| <b>Decatur</b>    | 3,629       | 3,381       | 3,043       | 2,871       | 2,885       | -744              |
| <b>Dickinson</b>  | 19,532      | 19,121      | 19,454      | 19,762      | 18,902      | -630              |
| <b>Doniphan</b>   | 8,006       | 8,186       | 7,988       | 7,864       | 7,727       | -279              |
| <b>Douglas</b>    | 95,706      | 102,552     | 107,892     | 112,864     | 120,793     | 25,087            |
| <b>Edwards</b>    | 3,558       | 3,309       | 3,068       | 2,979       | 2,893       | -665              |
| <b>Elk</b>        | 3,330       | 3,148       | 2,939       | 2,720       | 2,498       | -832              |
| <b>Ellis</b>      | 27,673      | 27,532      | 27,710      | 29,053      | 28,689      | 1,016             |
| <b>Ellsworth</b>  | 6,538       | 6,419       | 6,503       | 6,494       | 6,330       | -208              |
| <b>Finney</b>     | 37,841      | 38,499      | 35,663      | 37,200      | 37,084      | -757              |
| <b>Ford</b>       | 30,917      | 31,981      | 32,168      | 34,752      | 34,381      | 3,464             |
| <b>Franklin</b>   | 24,156      | 25,218      | 25,734      | 25,906      | 25,733      | 1,577             |
| <b>Geary</b>      | 27,700      | 27,679      | 27,951      | 38,013      | 33,855      | 6,155             |
| <b>Gove</b>       | 3,150       | 3,018       | 2,757       | 2,729       | 2,631       | -519              |
| <b>Graham</b>     | 3,145       | 2,886       | 2,707       | 2,578       | 2,495       | -650              |
| <b>Grant</b>      | 7,925       | 7,901       | 7,756       | 7,923       | 7,526       | -399              |

|                     |         |         |         |         |         |         |
|---------------------|---------|---------|---------|---------|---------|---------|
| <b>Gray</b>         | 5,669   | 5,973   | 5,735   | 6,030   | 5,958   | 289     |
| <b>Greeley</b>      | 1,629   | 1,422   | 1,275   | 1,298   | 1,249   | -380    |
| <b>Greenwood</b>    | 7,806   | 7,567   | 6,957   | 6,454   | 6,123   | -1,683  |
| <b>Hamilton</b>     | 2,526   | 2,676   | 2,633   | 2,639   | 2,640   | 114     |
| <b>Harper</b>       | 6,677   | 6,307   | 5,998   | 5,911   | 5,590   | -1,087  |
| <b>Harvey</b>       | 32,980  | 33,254  | 33,823  | 34,852  | 34,544  | 1,564   |
| <b>Haskell</b>      | 4,188   | 4,194   | 4,184   | 4,256   | 4,053   | -135    |
| <b>Hodgeman</b>     | 2,124   | 2,139   | 1,959   | 1,963   | 1,842   | -282    |
| <b>Jackson</b>      | 12,325  | 12,826  | 13,348  | 13,449  | 13,318  | 993     |
| <b>Jefferson</b>    | 18,001  | 18,741  | 19,049  | 18,945  | 18,998  | 997     |
| <b>Jewell</b>       | 3,990   | 3,491   | 3,200   | 3,046   | 2,850   | -1,140  |
| <b>Johnson</b>      | 421,504 | 475,239 | 523,879 | 559,913 | 591,178 | 169,674 |
| <b>Kearny</b>       | 4,470   | 4,371   | 3,928   | 3,968   | 3,960   | -510    |
| <b>Kingman</b>      | 8,549   | 8,472   | 8,011   | 7,863   | 7,360   | -1,189  |
| <b>Kiowa</b>        | 3,460   | 3,150   | 2,837   | 2,496   | 2,485   | -975    |
| <b>Labette</b>      | 23,192  | 22,214  | 21,928  | 21,284  | 20,145  | -3,047  |
| <b>Lane</b>         | 2,189   | 1,981   | 1,763   | 1,704   | 1,559   | -630    |
| <b>Leavenworth</b>  | 68,076  | 70,793  | 73,791  | 77,739  | 81,095  | 13,019  |
| <b>Lincoln</b>      | 3,555   | 3,513   | 3,365   | 3,174   | 3,043   | -512    |
| <b>Linn</b>         | 9,146   | 9,724   | 9,858   | 9,441   | 9,726   | 580     |
| <b>Logan</b>        | 3,111   | 2,984   | 2,798   | 2,784   | 2,821   | -290    |
| <b>Lyon</b>         | 35,513  | 35,826  | 36,018  | 33,748  | 33,392  | -2,121  |
| <b>McPherson</b>    | 28,973  | 29,237  | 29,250  | 29,356  | 28,708  | -265    |
| <b>Marion</b>       | 13,579  | 13,289  | 12,707  | 12,347  | 11,986  | -1,593  |
| <b>Marshall</b>     | 11,166  | 10,585  | 10,150  | 10,022  | 9,745   | -1,421  |
| <b>Meade</b>        | 4,527   | 4,663   | 4,490   | 4,396   | 4,303   | -224    |
| <b>Miami</b>        | 26,799  | 29,072  | 31,962  | 32,612  | 33,461  | 6,662   |
| <b>Mitchell</b>     | 7,027   | 6,706   | 6,389   | 6,355   | 6,128   | -899    |
| <b>Montgomery</b>   | 36,987  | 35,490  | 35,504  | 34,459  | 32,556  | -4,431  |
| <b>Morris</b>       | 6,184   | 5,981   | 5,931   | 5,854   | 5,455   | -729    |
| <b>Morton</b>       | 3,472   | 3,387   | 3,256   | 3,169   | 2,740   | -732    |
| <b>Nemaha</b>       | 10,597  | 10,501  | 10,325  | 10,132  | 10,118  | -479    |
| <b>Neosho</b>       | 17,206  | 16,719  | 16,578  | 16,406  | 16,015  | -1,191  |
| <b>Ness</b>         | 3,518   | 3,352   | 3,150   | 3,068   | 2,869   | -649    |
| <b>Norton</b>       | 6,049   | 5,845   | 5,698   | 5,612   | 5,441   | -608    |
| <b>Osage</b>        | 16,546  | 16,689  | 16,468  | 16,142  | 15,772  | -774    |
| <b>Osborne</b>      | 4,618   | 4,283   | 3,916   | 3,806   | 3,610   | -1,008  |
| <b>Ottawa</b>       | 5,991   | 6,188   | 6,101   | 6,072   | 5,863   | -128    |
| <b>Pawnee</b>       | 7,350   | 6,996   | 6,930   | 6,928   | 6,680   | -670    |
| <b>Phillips</b>     | 6,141   | 5,833   | 5,588   | 5,519   | 5,370   | -771    |
| <b>Pottawatomie</b> | 17,626  | 18,580  | 20,395  | 22,302  | 23,908  | 6,282   |
| <b>Pratt</b>        | 9,769   | 9,669   | 9,698   | 9,728   | 9,547   | -222    |
| <b>Rawlins</b>      | 3,176   | 2,903   | 2,655   | 2,560   | 2,497   | -679    |
| <b>Reno</b>         | 64,042  | 64,163  | 63,683  | 64,438  | 62,510  | -1,532  |

|                   |           |           |           |           |           |         |
|-------------------|-----------|-----------|-----------|-----------|-----------|---------|
| <b>Republic</b>   | 6,059     | 5,485     | 5,124     | 4,858     | 4,691     | -1,368  |
| <b>Rice</b>       | 10,916    | 10,526    | 10,103    | 9,985     | 9,660     | -1,256  |
| <b>Riley</b>      | 64,018    | 62,625    | 67,329    | 75,508    | 74,172    | 10,154  |
| <b>Rooks</b>      | 5,769     | 5,482     | 5,275     | 5,223     | 5,043     | -726    |
| <b>Rush</b>       | 3,611     | 3,454     | 3,273     | 3,220     | 3,103     | -508    |
| <b>Russell</b>    | 7,626     | 7,066     | 6,943     | 6,946     | 6,915     | -711    |
| <b>Saline</b>     | 53,168    | 54,157    | 54,723    | 55,988    | 54,734    | 1,566   |
| <b>Scott</b>      | 5,137     | 4,960     | 4,707     | 4,937     | 4,961     | -176    |
| <b>Sedgwick</b>   | 439,254   | 461,020   | 478,479   | 503,889   | 513,687   | 74,433  |
| <b>Seward</b>     | 21,694    | 22,687    | 22,409    | 23,547    | 22,159    | 465     |
| <b>Shawnee</b>    | 168,547   | 170,349   | 174,162   | 178,991   | 178,187   | 9,640   |
| <b>Sheridan</b>   | 2,863     | 2,675     | 2,578     | 2,538     | 2,527     | -336    |
| <b>Sherman</b>    | 6,782     | 6,396     | 6,004     | 6,113     | 5,930     | -852    |
| <b>Smith</b>      | 4,621     | 4,311     | 4,008     | 3,765     | 3,668     | -953    |
| <b>Stafford</b>   | 4,972     | 4,646     | 4,460     | 4,358     | 4,207     | -765    |
| <b>Stanton</b>    | 2,439     | 2,421     | 2,176     | 2,175     | 2,060     | -379    |
| <b>Stevens</b>    | 5,363     | 5,442     | 5,397     | 5,756     | 5,612     | 249     |
| <b>Sumner</b>     | 26,041    | 25,500    | 24,290    | 23,674    | 23,159    | -2,882  |
| <b>Thomas</b>     | 8,342     | 8,119     | 7,681     | 7,941     | 7,788     | -554    |
| <b>Trego</b>      | 3,442     | 3,137     | 2,971     | 2,986     | 2,884     | -558    |
| <b>Wabaunsee</b>  | 6,897     | 6,750     | 6,998     | 7,039     | 6,874     | -23     |
| <b>Wallace</b>    | 1,804     | 1,671     | 1,481     | 1,517     | 1,524     | -280    |
| <b>Washington</b> | 6,651     | 6,201     | 5,880     | 5,758     | 5,485     | -1,166  |
| <b>Wichita</b>    | 2,664     | 2,453     | 2,264     | 2,256     | 2,125     | -539    |
| <b>Wilson</b>     | 10,397    | 10,104    | 9,783     | 9,105     | 8,675     | -1,722  |
| <b>Woodson</b>    | 3,942     | 3,602     | 3,363     | 3,278     | 3,147     | -795    |
| <b>Wyandotte</b>  | 157,858   | 157,498   | 154,267   | 159,129   | 165,288   | 7,430   |
| <b>Total</b>      | 2,635,297 | 2,713,535 | 2,783,785 | 2,885,905 | 2,913,123 | 277,826 |

Source: Kansas Information for Communities, 2017

## Demographic Analysis of the General Population in Kansas

### Race and Ethnicity

According to the 2017 data released from KDHE's Office of Vital Statistics, 88% of the state of Kansas is predominantly white without factoring for ethnicity, which is shown in Table 4. Table 5 presents the makeup of racial/ethnic identities in the state of Kansas in which 77.3% of the state of Kansas identifies as White, Non-Hispanic. The remaining racial/ethnic makeup of Kansas includes: Hispanic (11.9%), Black (6.6%), Asian/Pacific Islander (3.3%), and Native American (1%). The largest concentration of Hispanic persons living in Kansas is within Region 9 (40.7%), as shown in Table 6. Since 1997, the Hispanic population in Kansas has increased by nearly 58%. As of 2017, Native Americans are 1.5% of the general population and consist of 2.6% of the population in both Region 3 and Region 5. The Asian population makes up 3.4% of Kansas with the highest concentration (5.3%) in Region 2. The Hispanic population includes all races, and for the remainder of the report, every other race will be assumed as non-Hispanic unless specified.

**Table 4: Race Percentage Estimates for the General Population in Kansas by Region, 2017**

|                                   | White     | %     | Black   | %     | Native American | %    | Asian/Pacific Islander | %    | Total     |
|-----------------------------------|-----------|-------|---------|-------|-----------------|------|------------------------|------|-----------|
| <b>Region 1: Kansas City</b>      | 182,771   | 74.2% | 48,923  | 19.9% | 3,824           | 1.6% | 10,865                 | 4.4% | 246,383   |
| <b>Region 2: Kansas City</b>      | 554,705   | 88.8% | 33,700  | 5.4%  | 3,418           | 0.5% | 32,816                 | 5.3% | 624,639   |
| <b>Region 3: Lawrence</b>         | 146,381   | 88.4% | 7,765   | 4.7%  | 4,372           | 2.6% | 7,006                  | 4.2% | 165,524   |
| <b>Region 4: Topeka</b>           | 271,498   | 89.0% | 21,917  | 7.2%  | 6,703           | 2.2% | 4,922                  | 1.6% | 305,040   |
| <b>Region 5: Pittsburg</b>        | 171,121   | 92.7% | 6,486   | 3.5%  | 4,743           | 2.6% | 2,169                  | 1.2% | 184,519   |
| <b>Region 6: Manhattan</b>        | 133,033   | 85.8% | 13,983  | 9.0%  | 1,823           | 1.2% | 6,284                  | 4.1% | 155,123   |
| <b>Region 7: Salina</b>           | 270,727   | 95.4% | 7,095   | 2.5%  | 2,293           | 0.8% | 3,648                  | 1.3% | 283,763   |
| <b>Region 8: Wichita</b>          | 678,047   | 86.7% | 62,302  | 8.0%  | 12,763          | 1.6% | 28,984                 | 3.7% | 782,096   |
| <b>Region 9: Outreach Clinics</b> | 154,319   | 92.9% | 5,298   | 3.2%  | 2,737           | 1.6% | 3,682                  | 2.2% | 166,036   |
| <b>Total</b>                      | 2,562,602 | 88.0% | 207,469 | 7.1%  | 42,676          | 1.5% | 100,376                | 3.4% | 2,913,123 |

Source: Kansas Information for Communities, 2017

**Table 5: Race/Ethnicity Estimates for General Population in Kansas (1997-2017)**

|   | 1997      | 2002      | 2007      | 2012      | 2017      | Difference |
|---|-----------|-----------|-----------|-----------|-----------|------------|
| <b>Non-Hispanic, White</b>                  | 2,264,112 | 2,253,591 | 2,250,523 | 2,269,987 | 2,247,297 | -16,815    |
| <b>Non-Hispanic, Black</b>                  | 153,908   | 165,164   | 173,969   | 189,814   | 193,235   | 39,327     |
| <b>Non-Hispanic, Native American</b>        | 23,610    | 27,062    | 27,924    | 29,041    | 28,721    | 5,111      |
| <b>Non-Hispanic, Asian/Pacific Islander</b> | 43,641    | 57,218    | 67,714    | 80,002    | 96,411    | 52,770     |
| <b>Hispanic, All Races</b>                  | 150,026   | 210,500   | 263,655   | 317,061   | 347,459   | 197,433    |

Source: Kansas Information for Communities, 2017

**Table 6: Ethnicity Percentage Estimates for the General Population in Kansas by Region, 2017**

|                                   | Hispanic | %     | Non-Hispanic | %     | Total     |
|-----------------------------------|----------|-------|--------------|-------|-----------|
| <b>Region 1: Kansas City</b>      | 53,480   | 21.7% | 192,903      | 78.3% | 246,383   |
| <b>Region 2: Kansas City</b>      | 46,369   | 7.4%  | 578,270      | 92.6% | 624,639   |
| <b>Region 3: Lawrence</b>         | 9,388    | 5.7%  | 156,136      | 94.3% | 165,524   |
| <b>Region 4: Topeka</b>           | 32,512   | 10.7% | 272,528      | 89.3% | 305,040   |
| <b>Region 5: Pittsburg</b>        | 8,100    | 4.4%  | 176,419      | 95.6% | 184,519   |
| <b>Region 6: Manhattan</b>        | 13,793   | 8.9%  | 141,330      | 91.1% | 155,123   |
| <b>Region 7: Salina</b>           | 20,035   | 7.1%  | 263,728      | 92.9% | 283,763   |
| <b>Region 8: Wichita</b>          | 96,228   | 12.3% | 685,868      | 87.7% | 782,096   |
| <b>Region 9: Outreach Clinics</b> | 67,554   | 40.7% | 98,482       | 59.3% | 166,036   |
| <b>Total</b>                      | 347,459  | 11.9% | 2,565,664    | 88.1% | 2,913,123 |

Source: Kansas Information for Communities, 2017

## Age and Gender

Kansas has a dispersed population size by age group with close to 1.2 million of its citizens under the age of 30 and 1 million above the age of 50. The population is also virtually 50/50 male and female with about 9,000 more females statewide (Table 7). There are more males than females in each age group category until the 40 to 44 age group in which females make up the majority of every succeeding age group. This trend may be due in part to variables such as a longer life expectancy among women in Kansas, which will be discussed more later.

**Table 7: Estimated Percentage of Gender by Estimated Age Group  
for General Population in Kansas, 2017**

| <i>Age Group</i>    | <b>Male</b> | <b>%</b> | <b>Female</b> | <b>%</b> | <b>Total</b> | <b>Total<br/>Percentage</b> |
|---------------------|-------------|----------|---------------|----------|--------------|-----------------------------|
| <b>0 to 4</b>       | 98,430      | 6.8%     | 94,709        | 6.5%     | 193,139      | 6.6%                        |
| <b>5 to 9</b>       | 102,265     | 7.0%     | 97,539        | 6.7%     | 199,804      | 6.9%                        |
| <b>10 to 14</b>     | 102,270     | 7.0%     | 98,015        | 6.5%     | 200,285      | 6.9%                        |
| <b>15 to 19</b>     | 103,566     | 7.1%     | 96,711        | 6.6%     | 200,277      | 6.9%                        |
| <b>20 to 24</b>     | 113,186     | 7.8%     | 102,116       | 7.0%     | 215,302      | 7.4%                        |
| <b>25 to 29</b>     | 101,130     | 7.0%     | 92,831        | 6.4%     | 193,961      | 6.7%                        |
| <b>30 to 34</b>     | 96,236      | 6.6%     | 93,590        | 6.4%     | 189,826      | 6.5%                        |
| <b>35 to 39</b>     | 95,472      | 6.6%     | 92,005        | 6.3%     | 187,477      | 6.4%                        |
| <b>40 to 44</b>     | 82,937      | 5.7%     | 81,353        | 5.6%     | 164,290      | 5.6%                        |
| <b>45 to 49</b>     | 84,836      | 5.8%     | 83,832        | 5.7%     | 168,668      | 5.8%                        |
| <b>50 to 54</b>     | 87,941      | 6.1%     | 88,946        | 6.1%     | 176,887      | 6.1%                        |
| <b>55 to 59</b>     | 94,693      | 6.5%     | 99,094        | 6.8%     | 193,787      | 6.7%                        |
| <b>60 to 64</b>     | 87,823      | 6.0%     | 92,034        | 6.3%     | 179,857      | 6.2%                        |
| <b>65 to 69</b>     | 71,219      | 4.9%     | 75,893        | 5.2%     | 147,112      | 5.0%                        |
| <b>70 to 74</b>     | 50,832      | 3.5%     | 57,113        | 3.9%     | 107,945      | 3.7%                        |
| <b>75 to 79</b>     | 33,444      | 2.3%     | 41,372        | 2.8%     | 74,816       | 2.6%                        |
| <b>80 to 84</b>     | 23,071      | 1.6%     | 31,677        | 2.2%     | 54,748       | 1.9%                        |
| <b>85 and older</b> | 22,605      | 1.6%     | 42,337        | 2.9%     | 64,942       | 2.2%                        |
| <b>Total</b>        | 1,451,956   | 100      | 1,461,167     | 100      | 2,913,123    | 100                         |

Source: Kansas Information for Communities, 2017

There are nearly 40,000 more people between the age of 20 and 24 living in Kansas in 2017 than there were in 1997, but the net gain for 0 to 19 is approximately 11,000. The most substantial increases are in the 55 to 69 age range with an increase of about 213,000 people since 1997 (Table 9). The increase in size among the older age groups and the lack of similar increases in the younger population means that the overall Kansas population will likely decline within the next two decades.

According to the 2017 National Movers Study<sup>1</sup>, Kansas ranks 5<sup>th</sup> nationally in outbound movers where the primary reasons were family (16.22% of respondents) and their job (64.19%). Of all people moving into or out of Kansas, 57% were outbound while 43% were inbound movers. Most outbound movers were between the ages of 45 and 64 (51.08%) while most inbound movers to Kansas are <18 to 34 (26.04%) where 21% stated their move to Kansas was for family, and 62% for their job. The report does not stratify the variables based on sex or gender.

**Table 8: Estimated Population by Age Group for General Population in Kansas (1997-2017)**

| <b>Age Group</b>    | <b>1997<br/>Population</b> | <b>2002<br/>Population</b> | <b>2007<br/>Population</b> | <b>2012<br/>Population</b> | <b>2017<br/>Population</b> | <b>Difference</b> |
|---------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|-------------------|
| <b>0 to 4</b>       | 182,661                    | 190,497                    | 196,241                    | 203,267                    | 193,139                    | 10,478            |
| <b>5 to 9</b>       | 194,462                    | 190,379                    | 195,350                    | 203,485                    | 199,804                    | 5,342             |
| <b>10 to 14</b>     | 202,733                    | 203,075                    | 195,701                    | 199,856                    | 200,285                    | -2,448            |
| <b>15 to 19</b>     | 202,492                    | 212,019                    | 207,485                    | 200,937                    | 200,277                    | -2,215            |
| <b>20 to 24</b>     | 175,587                    | 201,799                    | 206,987                    | 213,701                    | 215,302                    | 39,715            |
| <b>25 to 29</b>     | 180,076                    | 164,712                    | 180,879                    | 197,048                    | 193,961                    | 13,885            |
| <b>30 to 34</b>     | 186,568                    | 178,102                    | 170,408                    | 190,403                    | 189,826                    | 3,258             |
| <b>35 to 39</b>     | 216,466                    | 189,700                    | 176,255                    | 168,915                    | 187,477                    | -28,989           |
| <b>40 to 44</b>     | 208,132                    | 212,385                    | 187,085                    | 174,123                    | 164,290                    | -43,842           |
| <b>45 to 49</b>     | 178,429                    | 203,215                    | 208,241                    | 184,944                    | 168,668                    | -9,761            |
| <b>50 to 54</b>     | 142,514                    | 173,713                    | 198,668                    | 203,847                    | 176,887                    | 34,373            |
| <b>55 to 59</b>     | 109,945                    | 135,862                    | 168,544                    | 191,357                    | 193,787                    | 83,842            |
| <b>60 to 64</b>     | 97,168                     | 103,693                    | 129,429                    | 159,753                    | 179,857                    | 82,689            |
| <b>65 to 69</b>     | 94,967                     | 88,791                     | 96,493                     | 120,070                    | 147,112                    | 52,145            |
| <b>70 to 74</b>     | 87,540                     | 83,382                     | 79,909                     | 86,760                     | 107,945                    | 20,405            |
| <b>75 to 79</b>     | 74,047                     | 87,228                     | 84,432                     | 68,923                     | 74,816                     | 769               |
| <b>80 to 84</b>     | 51,623                     | 42,956                     | 44,618                     | 56,348                     | 54,748                     | 3,125             |
| <b>85 and older</b> | 49,887                     | 52,027                     | 57,060                     | 62,168                     | 64,942                     | 15,055            |
| <b>Total</b>        | 2,635,297                  | 2,713,535                  | 2,783,785                  | 2,885,905                  | 2,913,123                  | 277,826           |

Source: Kansas Information for Communities, 2017

### **Socioeconomic Status**

The purpose of highlighting socioeconomic variables among Kansas residents is to calculate the social determinants of health and view/compare disparities among different groups of people. This section does not attempt to investigate the reasons for any disparities but will mention potential possibilities to help advance future research questions and analyses.

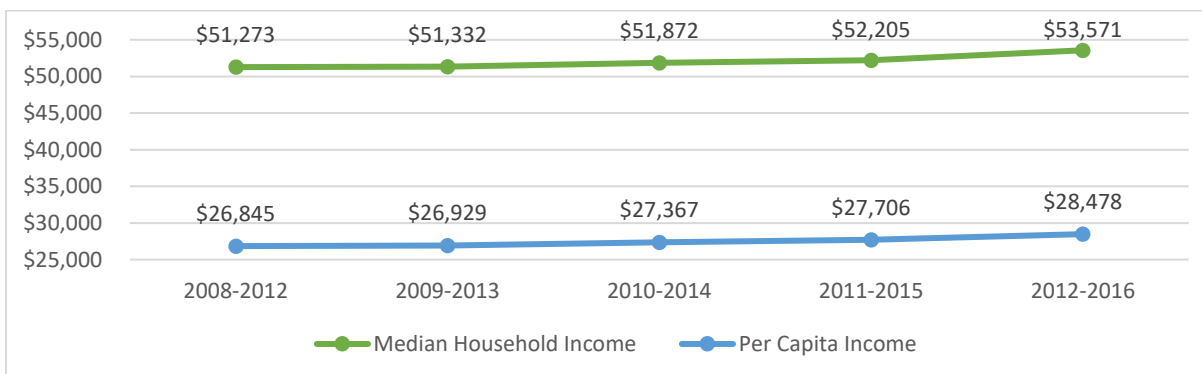
<sup>1</sup> The National Movers Study is an annual survey conducted by United Van Lines for the past 41 years to track their customer's state-to-state migration patterns.

According to the 2017 American Community Survey (ACS)<sup>2</sup>, Kansas ranks 18<sup>th</sup> among the U.S. with the lowest levels of income inequality. The counties with the highest levels of income inequality are Riley and Douglas counties. Nationally, the highest levels of income inequality are in the Southern and Southeastern portions of the U.S., which also have the highest rates of HIV cases.

In Figure 2, you can see the trend in Median Household Income and Per Capita Income from 2012-2016 using 5-year estimates where all values are adjusted for inflation. At the time of writing this report, the 2013-2017 5-year data had not yet been released. The 5-year estimates are the most reliable data points and are used in this report for accuracy. They are also more efficient when analyzing data at the census tract level, which will be used to analyze regional data later in this report. Single year data will be mentioned, but should not be used to deduce a rising or declining trend among any specific variable.

The 1-year estimate of Kansas residents' median household income in 2017 was \$56,422 (adjusted-inflation dollars). According to the ACS, Kansans with children under 18 years of age, the median household income was \$68,860 in 2017. In single parent households, women are disproportionately disadvantaged. The median income was \$26,926 for female householders in Kansas with no husband present and children under the age of 18 (9.4% of the population) compared to \$45,309 for male householders with no wife present and children under the age of 18 (3.8% of the population).

**Figure 2: Median Household Income and Per Capita Income Among Kansas Residents (2012-2016)**

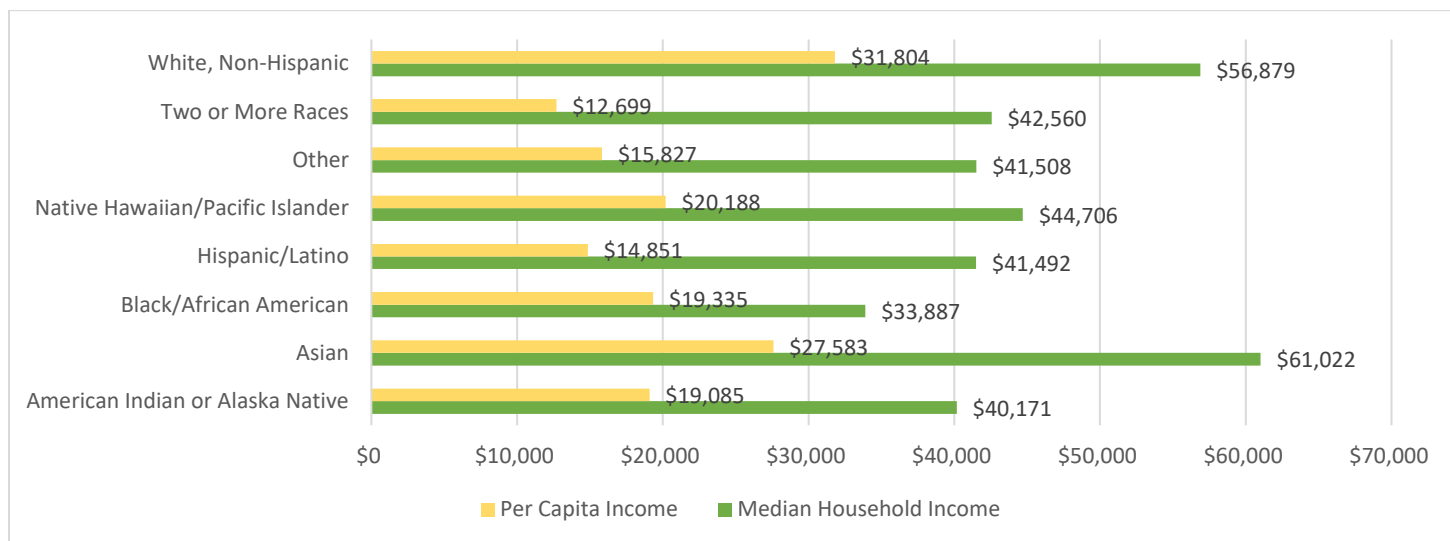


Source: American Community Survey, 2016

Figure 3, shows the household income and per capita income differences between racial/ethnic groups living in Kansas. In 2016, Hispanic/Latino, Black/African American, and American Indian/Alaska Native groups had the lowest household incomes. Multi-racial and Hispanic groups' per capita incomes are nearly one-third of the size of their respective median household incomes and fall short of \$15,000. In other words, multi-racial and Hispanic households are likely to have more than two wage earners present. According to ACS, 10.9% of Kansas households have three or more wage earners, 46% have two, and 30.5% have one.

<sup>2</sup> The American Community Survey is a U.S. Census Bureau program that conducts an annual survey to assist in the determination of distributing federal and state funds.

**Figure 3: Median Household Income and Per Capita Income Among Kansas Residents by Race/Ethnicity, 2016**

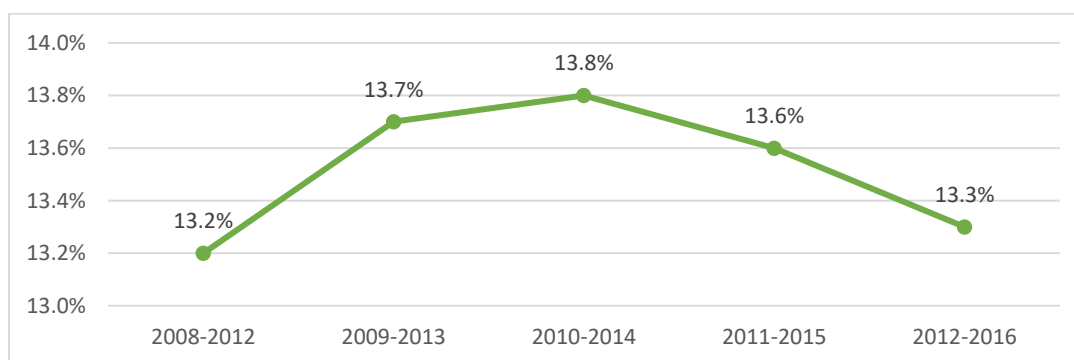


Source: American Community Survey, 2016

The data in Figure 4 and Figure 5 are analyzed by using poverty thresholds instead of poverty guidelines. Poverty guidelines are simplified versions of the poverty threshold issued annually by the Department of Health and Human Services that are used for administrative purposes such as financial eligibility for federal programs. The poverty threshold uses a base-year (1982) and multiplies the base-year poverty threshold by average monthly inflation factor for the 12 preceding months from the point of data collection.

For example, the 1982 federal poverty line (threshold base value) was \$7,765 for a 3-member household. Now, let's say the average rate of inflation for the last 12 months is 2.13. By multiplying the threshold value of \$7,765 with the average inflation factor of 2.13, the poverty threshold becomes \$16,539 whereas the 2016 poverty guidelines place the poverty level at \$20,160 for a 3-member household. Poverty thresholds are more beneficial for statistical analysis because it allows all years to be measured under the same criteria.

**Figure 4: Kansas Residents Living Below Poverty Level (2012-2016)**

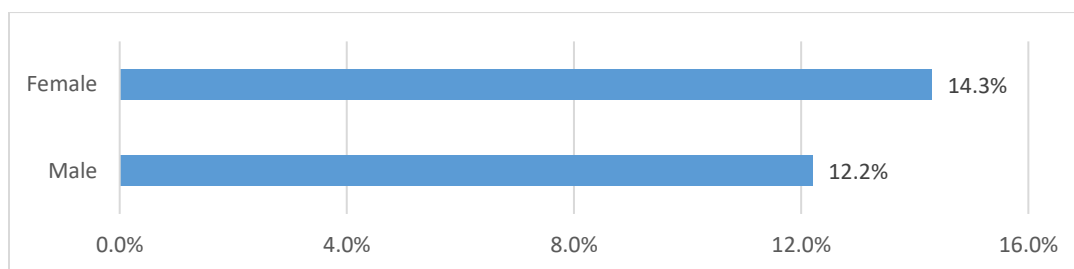


Source: American Community Survey, 2016

According to ACS, Kansas ranks 21<sup>st</sup> nationally in 2017 (11.9%) for the lowest proportion of residents living below the federal poverty line. As seen in Figure 4, the most recent 5-year average poverty rate is 13.3% while Figure 5 illustrates that more females (14.3%) live below the poverty line than males (12.2%). The most plausible

explanation for the increase in poverty rates seen Figure 4 is likely due to the aftermath of the 2008 recession. In 2017, 14.4% of children related to the householder and 29.3% of female-headed households with no husband present were living in poverty. By contrast, these numbers were 18.3% and 33.8% in 2013 using 1-year data points. Overall, the proportion of Kansans living below the poverty line is declining.

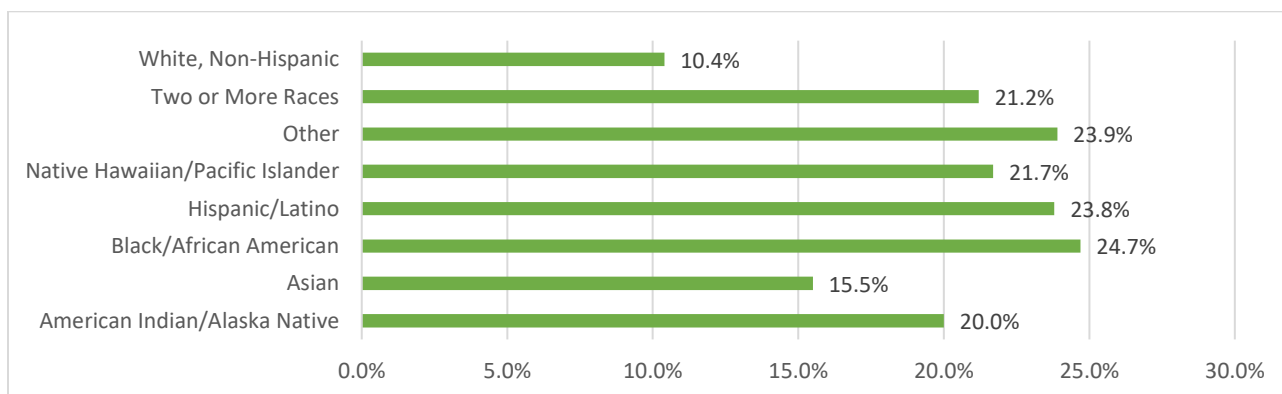
**Figure 5: Kansas Residents Living Below Poverty Level by Gender, 2016**



Source: American Community Survey, 2016

Figure 6 illustrates the 2012-2016 poverty rates by race/ethnic identity in which the Hispanic (23.8%) and Black (24.7%) populations disproportionately live under conditions of poverty compared with the White (10.4%) and Asian (15.5%) populations. The 1-year averages from ACS in 2017 show a decline in all the groups listed in Figure 6 except for the American Indian (21.5% below poverty) and Black populations (26.1% below poverty). Additionally, the proportion of foreign-born Kansans living below the poverty level was 15.9% in 2017.

**Figure 6: Kansas Residents Living Below Poverty Level by Race/Ethnicity, 2016**



Source: American Community Survey, 2016

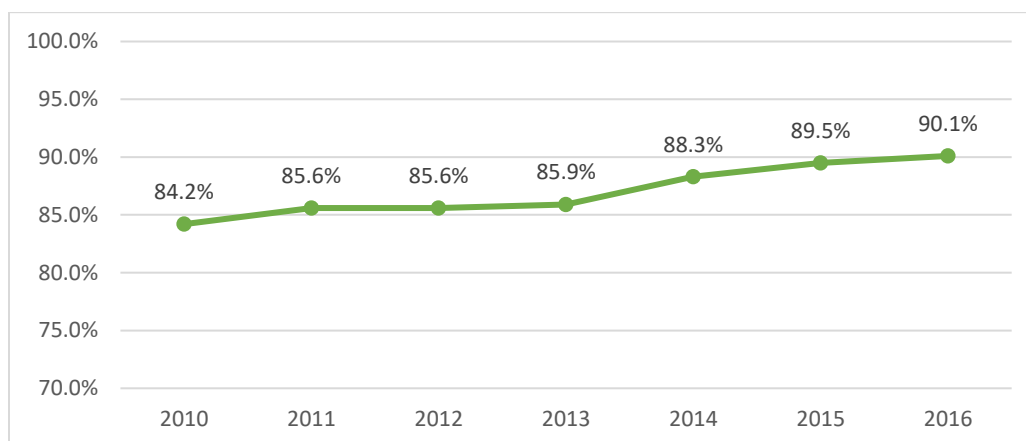
According to Small Area Health Insurance Estimates (SAHIE)<sup>3</sup>, 90.1% of the general population in Kansas have health insurance (90.8% of females and 89.3% of males), which ranks Kansas 30<sup>th</sup> in the U.S. for health insurance coverage. The 2016 SAHIE report highlights that all 25 states above the U.S. average for insured population rates with the exception of Wisconsin are Medicaid expansion states while 18 of the 25 below the U.S. average elected to not expand Medicaid under the Affordable Care Act (ACA).

The individual mandate included in the ACA requiring American citizens to have health insurance went into effect in 2014, which coincides with the most significant increase in health insurance coverage among Kansas

<sup>3</sup> The Small Area Health Insurance Estimates is a U.S. Census Bureau program and is the only source that features county-level data for single-year health insurance coverage estimates.

residents rising from 85.9% in 2013 to 88.3% in 2014. Between the 2015 and 2016, the SAHIE shows the most significant increase in health insurance coverage in Kansas was among the Hispanic population increasing nearly 3 points from 76% to 79%.

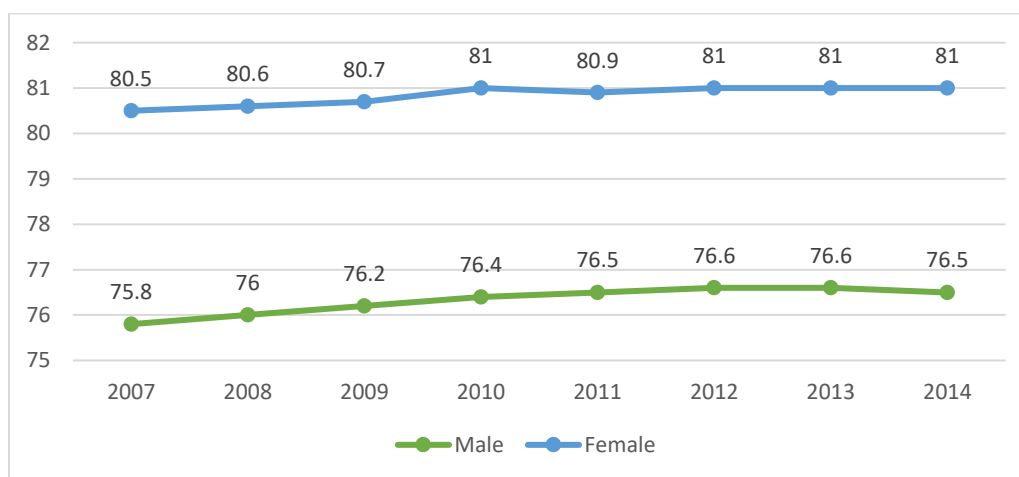
**Figure 7: Kansas Residents with Health Insurance (2010-2016)**



Source: Small Area Health Insurance Estimates, 2016

According to CDC, the average life expectancy in the United States in 2014 was 78.9 years. However, the national average dropped two consecutive years in 2015 and 2016 to 78.6 years (81.1 for women and 76.1 for men) in which the data remains unchanged for 2017. Meanwhile, the 2017 Institute for Health Metrics and Evaluation (IHME)<sup>4</sup> shows that the average life expectancy for Kansas females as 80.2 years and 76.2 years for males, a decline from their respective 2014 averages.

**Figure 8: Life Expectancy Among Kansas Residents by Gender (2007-2014)**



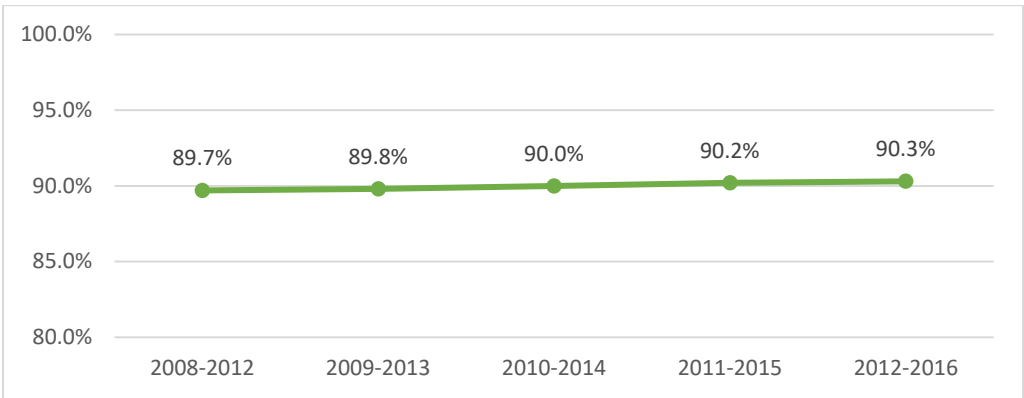
Source: Institute for Health Metrics and Evaluation, updated 2017

Figure 9 below shows the 5-year trend in the proportion of Kansans that hold a high school diploma or higher in which a 0.5 point increase from 89.7% to 90.3% has been witnessed. The attainment of a high school diploma

<sup>4</sup> The Institute for Health Metrics and Evaluation (IHME) is an independent research center on health issues housed at UW Medicine, which is part of the University of Washington.

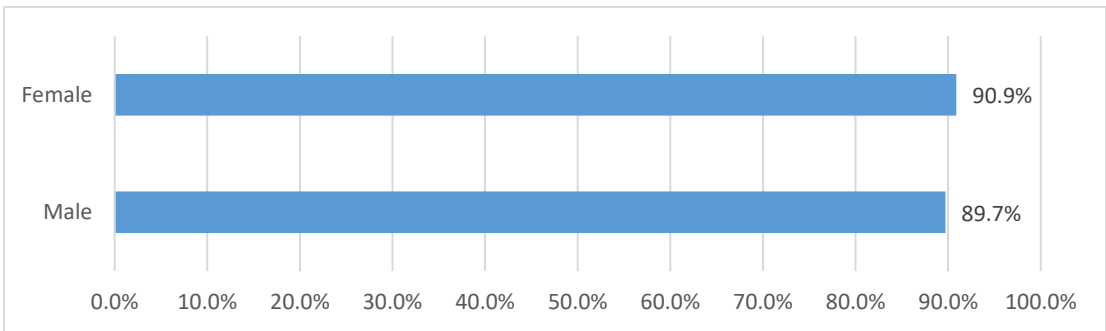
among males and females are 1.2 points apart with females averaging higher levels of high school completion, as shown in Figure 10. However, Figure 11 demonstrates the disparities between racial/ethnic groups, with the Hispanic population seeing far fewer high school graduates.

**Figure 9: Kansans Age 25+ with a High School Degree or Higher (2012-2016)**



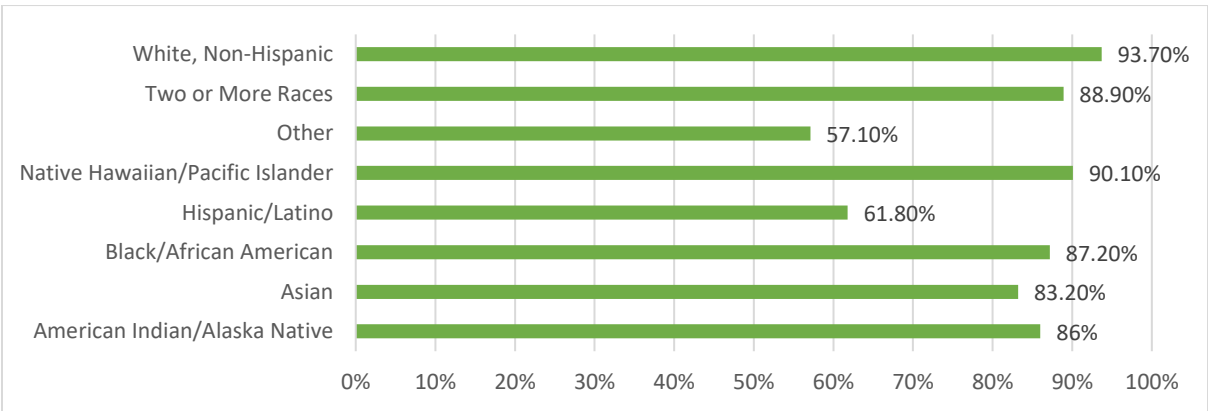
Source: American Community Survey, 2016

**Figure 10: Kansans Age 25+ with a High School Degree or Higher by Gender, 2016**



Source: American Community Survey, 2016

**Figure 11: Kansans Age 25+ with a High School Degree or Higher by Race/Ethnicity, 2016**



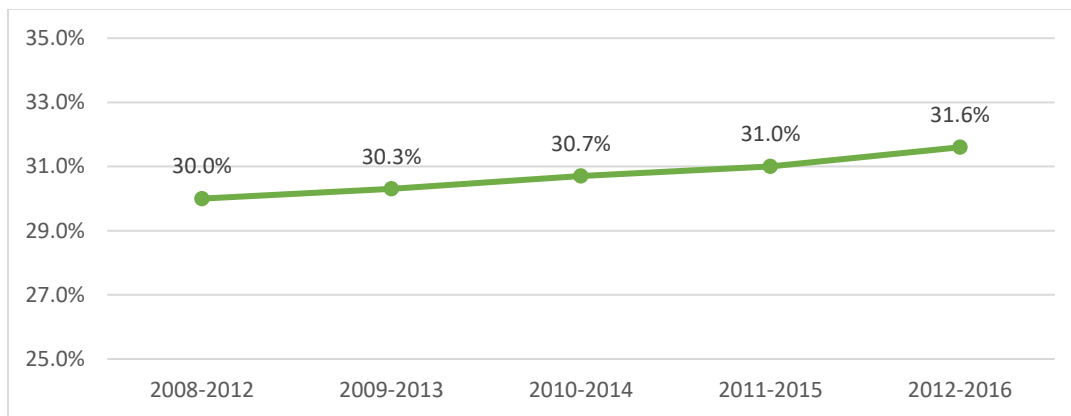
Source: American Community Survey, 2016

Due to most substantial disparities in high school graduation rates coming from the Hispanic population in Kansas, the HIV data will not analyze the neighborhood-level data for this variable. After reviewing the High

School Diploma and Bachelor's Degree variables, the proportion of Kansans with a Bachelor's Degree or higher will likely provide more depth into the analysis of the social determinants of health among HIV-positive Kansans and will be discussed in detail in later sections.

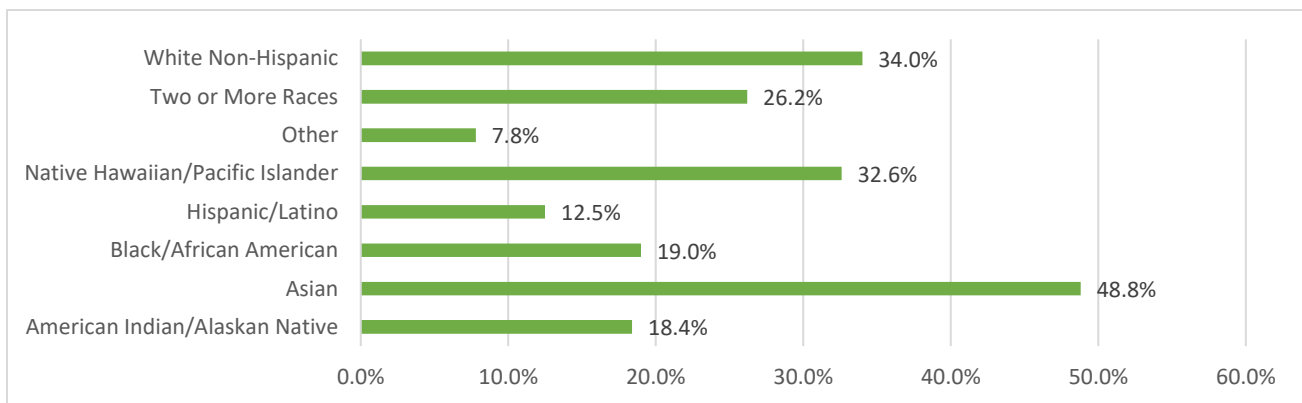
Figure 12 shows a 5-year period in which the general population in Kansas with a bachelor's degree increased from 30% to 31.6%. Meanwhile, Figure 13 illustrates the disparities between various groups of Kansans that hold a bachelor's degree with Hispanic (12.5%), Black (19%), and American Indian (18.4%) populations having less college graduates than White (34%), Multi-Racial (26.2%), Pacific Islander (32.6%), and Asian (48.8%) populations. Figure 14 demonstrates that males and females are nearly equivalent in attaining a bachelor's degree with slightly higher numbers among females.

**Figure 12: Kansans Age 25+ with a Bachelor's Degree or Higher (2012-2016)**



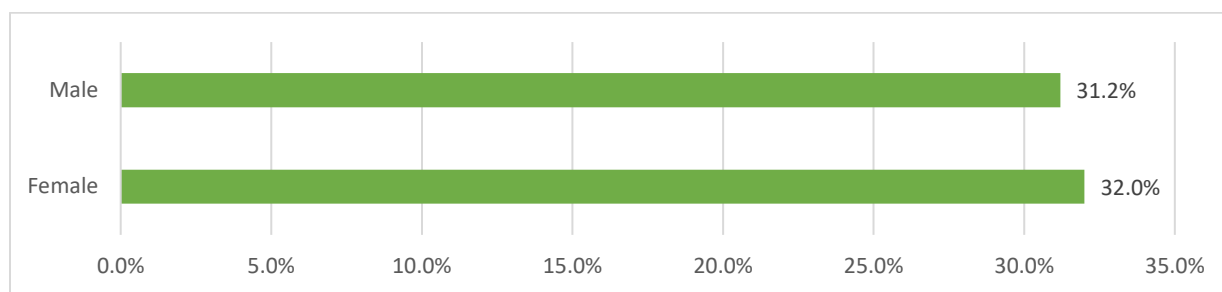
Source: American Community Survey, 2016

**Figure 13: Kansans Age 25+ with a Bachelor's Degree or Higher by Race/Ethnicity, 2016**



Source: American Community Survey, 2016

**Figure 14: Kansans Age 25+ with a Bachelor's Degree or Higher by Sex at Birth, 2016**



Source: American Community Survey, 2016

According to a Pew Research Center<sup>5</sup> study released in 2017, the nationwide Hispanic high school dropout rate has declined from 34% in 1996 to 10% in 2016. Also, the study reports 47% of Hispanic high school graduates are enrolling in college, which is equivalent to enrollment percentages among the White population. These trends speak to the larger national demographic shift that is currently witnessed in Kansas with a rising Hispanic population.

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<sup>5</sup> Pew Research Center is a subsidiary of The Pew Charitable Trusts and a nonpartisan think tank that conducts social science research.

## *Part 2: HIV in Kansas*

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*Overall trends for the HIV Epidemic in Kansas*

*Overview of the Not in Care program*

*Cascade of Care / Continuum of Care*

## *HIV in Kansas Section Highlights*

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- On average, 131 people are newly diagnosed with HIV in Kansas annually. The prevalent number of individuals living with HIV in Kansas on average increases in accordance with the number of newly diagnosed cases each year.
- The proportion of individuals diagnosed with State 3 concurrently or within 12 months of their initial HIV diagnoses has decreased significantly over the last 10 years.
- The majority of the HIV Epidemic (both prevalence and incidence) is found in the Kansas City and Wichita areas.
- The majority of people living with HIV (PLWH) are male, non-Hispanic White, men who have sex with men (MSM), and between 40 and 59 years of age.
- Young, MSM, of color (Black/African American and Hispanic) are disproportionately affected by the disease.
- Among HIV-positive Kansans, four racial/ethnic groups have poverty rates greater than 20%
- Despite a decrease in funding for Counseling and Testing (CT) sites, 2014-2017 yielded higher percent positives than seen in previous years.
- Persons in Kansas having ever been tested for HIV in both healthcare and non-healthcare settings has decreased from 2013 to 2017.
- The Continuum of Care identifies the major milestones of HIV care in an attempt to reach the ultimate goal of viral suppression. As of December 31, 2017, 76.4% of all Kansans who are living with HIV are virally suppressed.

## The HIV Epidemic in Kansas

Analysis of the HIV epidemic in Kansas will include information about those infected such as the likely mode of transmission of the virus (if known), location of the areas with the highest levels of incidence and prevalence, and trend analyses. Data will be presented on a person-based basis rather than by case-based unless noted otherwise. Person-based is counting the number of individuals. For example, if an HIV-positive person was co-infected with both chlamydia and gonorrhea on an analysis for HIV co-infection with an STI, a person-based analysis counts the person once while a case-based analysis counts them twice.

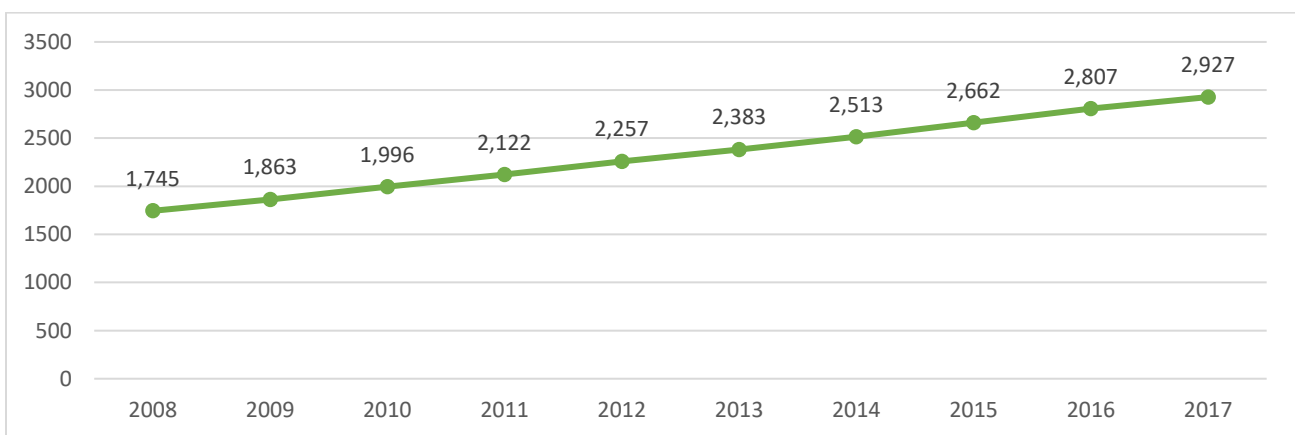
Data presented is for a five-year period beginning January 1, 2013 through December 31, 2017. Due to data cleanup efforts, the data was analyzed using collected information as of November 11<sup>th</sup>, 2018. The completeness and accuracy of HIV surveillance data are impacted by several factors which include but are not limited to: compliance of case reporting, timeliness of reporting, test-seeking behaviors of HIV-infected persons, and availability of testing services.

### Incidence and Prevalence

Prevalence is the total number of known HIV-positive people living in Kansas while incidence is the total number of newly diagnosed HIV-positive Kansans. To gain a more accurate estimate of HIV prevalence, HIV Surveillance omitted all persons shown to be living with HIV in Kansas but to the program's knowledge, has not seen a medical provider prior to January 1<sup>st</sup>, 2008. In the program's experience, many of these cases are patients that were inaccurately diagnosed as HIV-positive, patients that moved out of state or country, or has since been pronounced as deceased.

Figure 15 is a ten-year trend of the estimated number of persons living in Kansas with HIV. As of 2017, the HIV population reached 2,927, which is a rate of 100.5 per 100,000 persons. In contrast, the 2013 HIV population was 2,383 at a rate of 82.3 per 100,000 people.

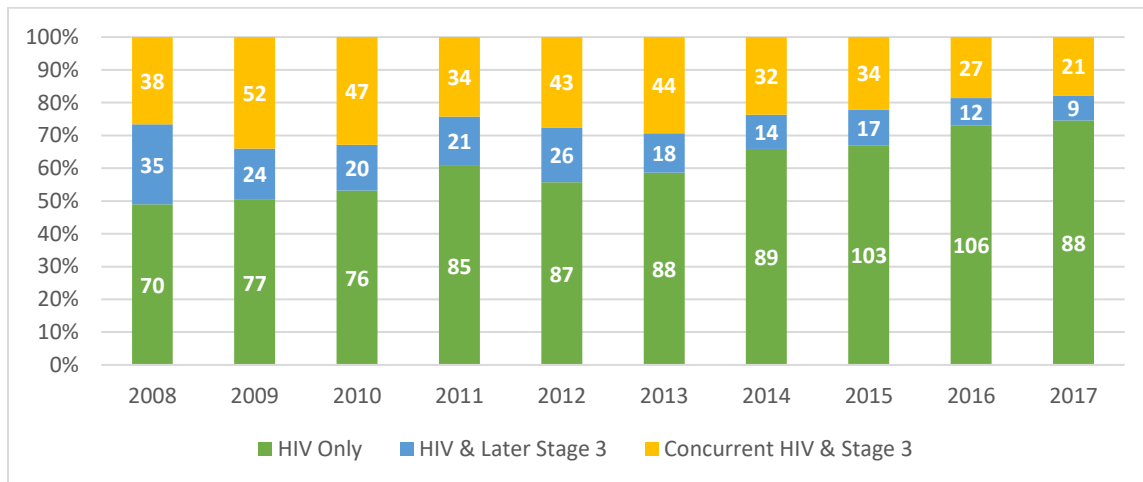
**Figure 15: Estimated HIV Prevalence in Kansas (2008-2017)**



In 2017, the state of Kansas diagnosed 118 patients with HIV (the lowest total of incident cases in a 10-year span seen on Figure 15) at a rate of 4.1 per 100,000 people. 2013 witnessed 150 newly diagnosed HIV cases among

Kansas residents at a rate of 5.2 per 100,000 people. Figure 16 illustrates the proportion of incident cases by disease status in which HIV Only is defined as an initial HIV diagnosis, and after 12 months, had not progressed to Stage 3 (formerly known as AIDS). HIV & Later Stage 3 is a Stage 3 diagnosis within 12 months of the initial HIV diagnosis. Concurrent HIV & Stage 3 means the patient was newly diagnosed simultaneously with HIV & Stage 3, which often indicates the patient was unaware of their HIV status for a long period of time. A Stage 3 diagnosis is determined by a patient's CD4 count, which is a test that measures how many white blood cells are in a patient's body that is crucial for fighting bacteria, viruses, and germs. A CD4 count below 200 cells per microliter (uL) among HIV patients is a Stage 3 diagnosis (Figure 17).

**Figure 16: HIV Incidence in Kansas by Diagnostic Stage (2008-2017)**



According to Figure 16, over the last 10 years, the proportion of patients diagnosed with Stage 3 concurrently or within 12 months of their initial HIV diagnoses has decreased significantly, with consecutive declines over the past 5 years. In 2008, more than 50% of newly diagnoses patients were Stage 3 or progressed to Stage 3 within a year while approximately 25% of newly diagnosed HIV patients in 2017 progressed to Stage 3.

**Figure 17: HIV Infection Stages**

#### Stage 0 (Acute Infection)

- Determined by having a previous negative or indeterminate HIV result within 180 days of the first positive HIV test result.
- Determined based on a testing algorithm in which the patient receives an initial positive HIV result, a negative or indeterminate supplemental antibody test result (i.e. HIV 1/2 Antibody Differentiation Immunoassay), and a positive NAT result.

#### Stage 1

- CD4 is equal to or greater than 500 cells/uL

#### Stage 2

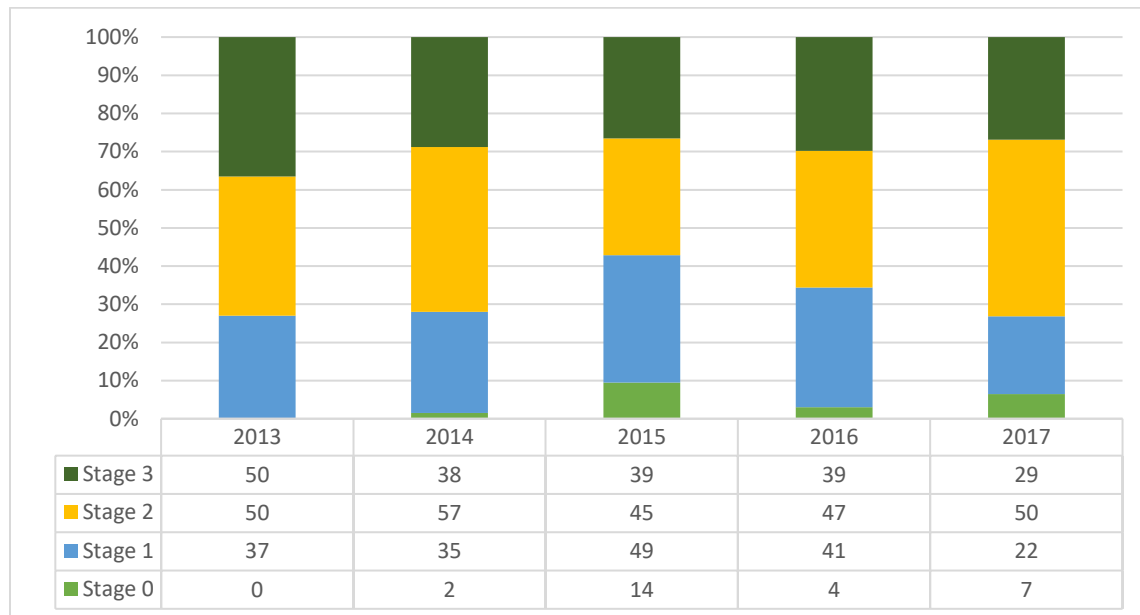
- CD4 is between 200 and 499 cells/uL

#### Stage 3 (Formerly known as AIDS)

- CD4 is less than 200 cells/uL

Figure 18 is a five-year analysis about the HIV infection stage among newly diagnosed patients. The infection stages are useful for monitoring the HIV burden on the population. The number totals in Figure 18 will differ from those in Figure 16 due to some patients not receiving an initial CD4 after diagnosis or HIV Surveillance not being notified of their initial CD4. Before May 2018, only CD4 counts above 500 cells/uL were required to be reported to the state of Kansas. Therefore, assumptions should not be made that the patients missing from this analysis are not engaged in care or are likely Stage 3 diagnoses. Unlike Figure 16, the graph below does not show a proportionate decline in Stage 3 diagnoses for the past five years, but Stage 3 diagnoses remain less than 30% of the total incidence from 2014-2017.

**Figure 18: Newly Reported HIV Diagnosis Among Kansas Residents by HIV Stage Category (2013-2017)**



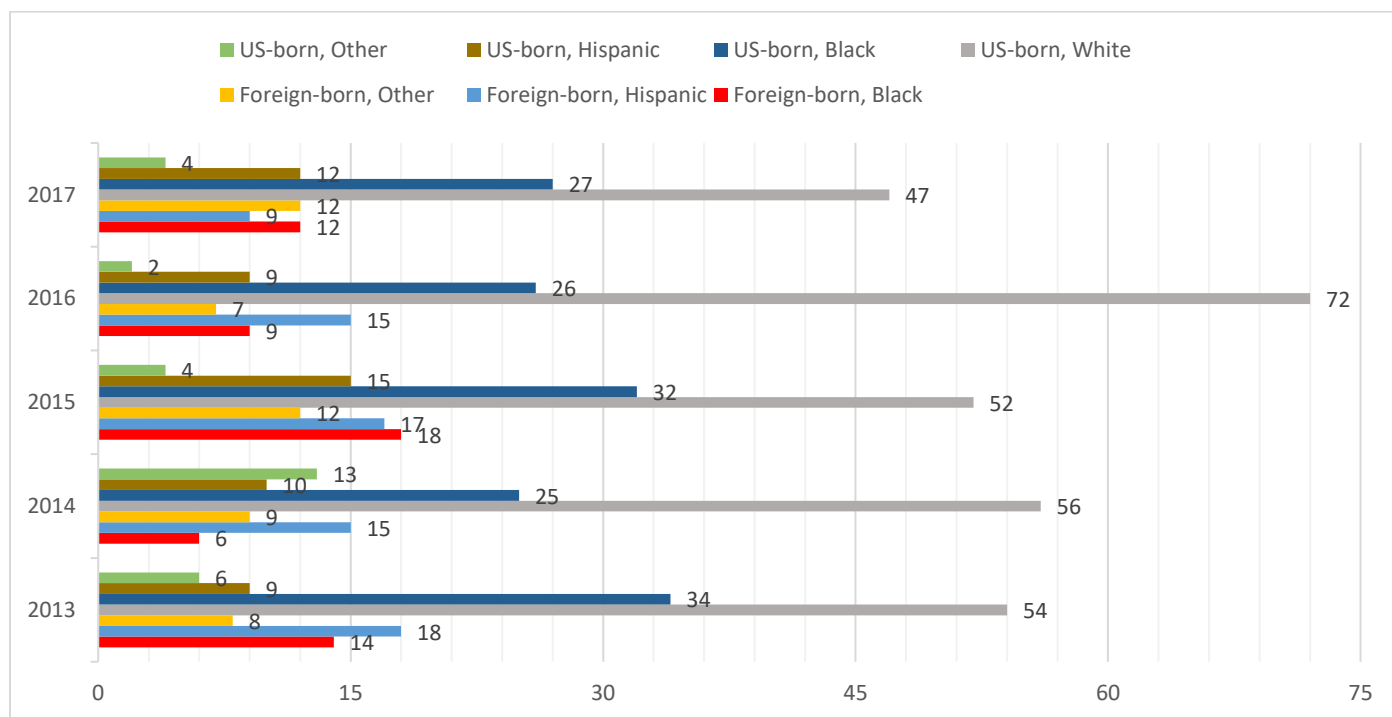
About one out of four newly diagnosed HIV persons in Kansas from 2013 to 2017 were born outside of the United States. These numbers include patients that already knew about their HIV status when migrating to Kansas. Some foreign-born patients come from war-torn countries that experienced a rising HIV population following the conclusion of conflict (such as Angola, Cambodia, and El Salvador) or were born with HIV. Unlike the Kansas native HIV population, the most common mode of transmission among foreign-born persons is heterosexual.

Figure 19 presents the overall number of new diagnoses in Kansas within the last 5 years with white U.S.-born individuals making up the majority of diagnoses. However, newly diagnosed black individuals (U.S.-born and foreign-born) are nearly equivalent to that of newly diagnosed white U.S.-born persons with the exception of 2014 and 2016. Since 2013, 228 minorities newly diagnosed with HIV were born in the United States while 181 individuals were born in a different country. Meanwhile, the remaining 281 HIV diagnoses in the same period were white U.S.-born individuals.

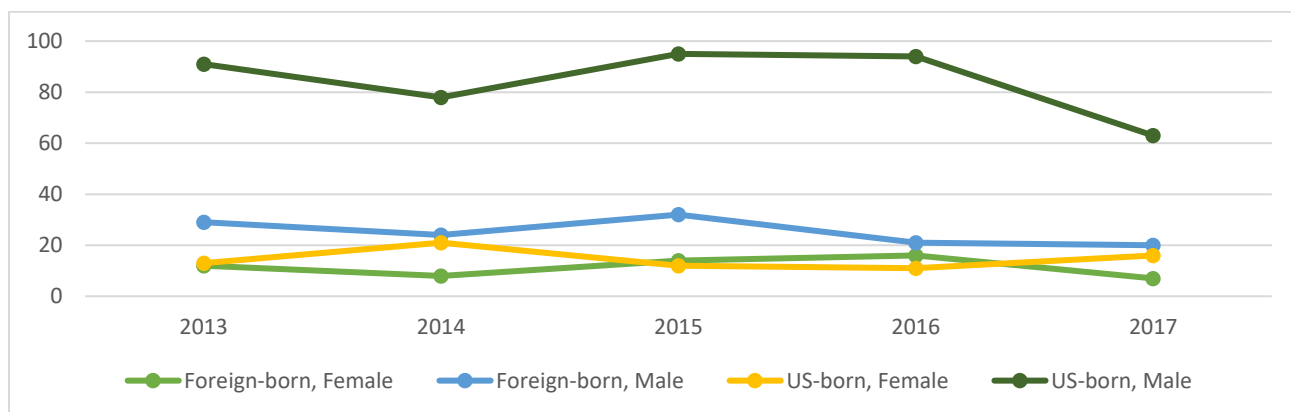
Most incident HIV cases in Kansas since 2013 are U.S.-born males, as shown in Figure 20. Foreign-born males make up the second largest block of incident cases while foreign-born female incident counts surpassed U.S.-

born female incidence twice in the past five years (2015 and 2016). Figure 20 shows all categories by sex at birth to be relatively stagnant with no significant downward or upward trend.

**Figure 19: Newly Reported HIV Diagnosis Among Kansas Residents by Country of Birth and Race/Ethnicity (2013-2017)**



**Figure 20: Newly Reported HIV Diagnosis Among Kansas Residents by Country of Birth and Sex at Birth (2013-2017)**



## Geographical Analysis

Most persons living with HIV reside in the Kansas City and Wichita areas (Regions 1, 2, and 8). As of 2017, 73.9% of all HIV-positive persons resided in Regions 1, 2, or 8. Although HIV infection is more frequent in these regions, there are people living with HIV in 79% (83 of 105) of Kansas counties. Figure 21 presents the number of people living with HIV by county for the state of Kansas as of December 2017. If a county hosts a correctional facility, the numbers for that county may be inflated.

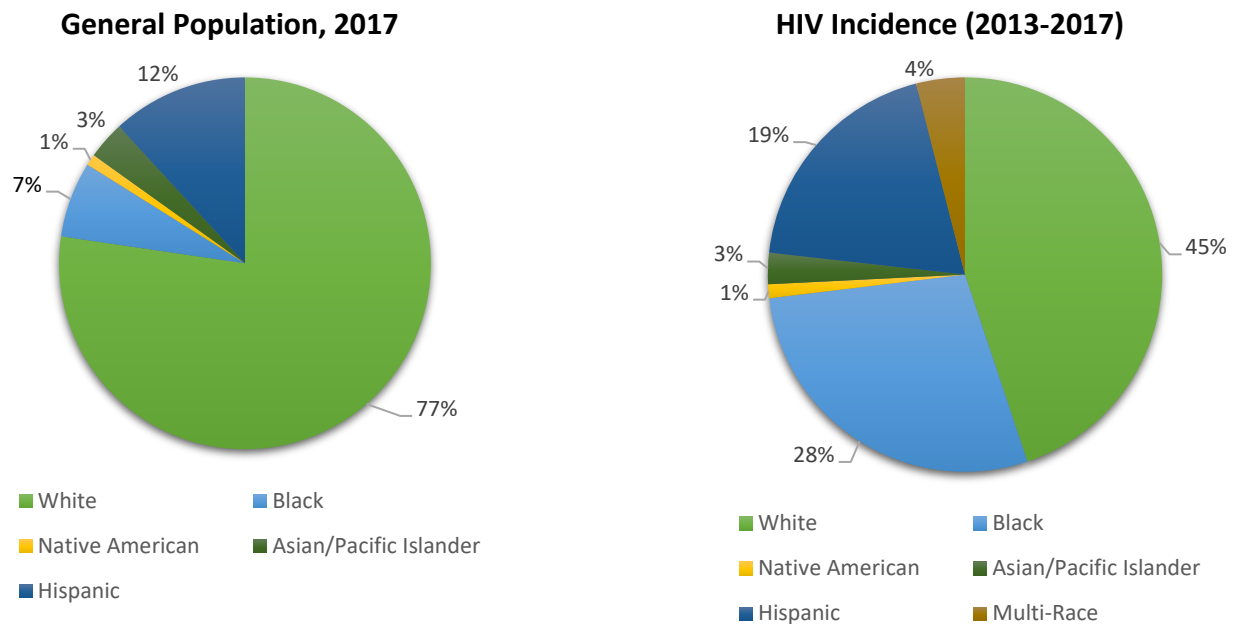
[illegible]

0 1-14 15-74 75-200 201+

45

The case rates in Table 9 are useful measures when conducting a statistical analysis and assist in comprehending how disproportionately affected minority HIV populations are in the state of Kansas. Here, Black HIV prevalence is 392.8 per 100,000 persons compared to 67.3 per 100,000 for the White population.

**Figure 22: HIV Incidence Among Kansas Residents by Race/Ethnicity**



**Table 9: Prevalence of HIV Among Kansas Residents by Race/Ethnicity, 2017**

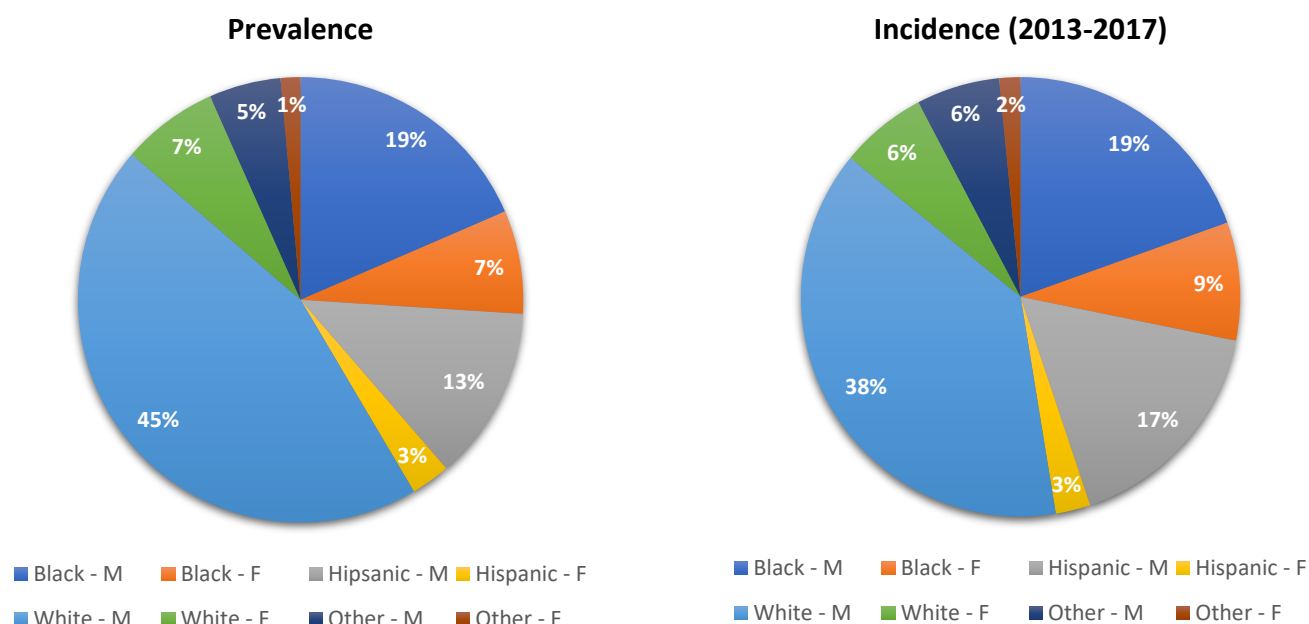
|   | Population | HIV Count | HIV Case Rates* |
|---|------------|-----------|-----------------|
| <b><i>Non-Hispanic White</i></b>                  | 2,247,297  | 1,513     | 67.3            |
| <b><i>Non-Hispanic Black</i></b>                  | 193,235    | 759       | 392.8           |
| <b><i>Non-Hispanic Native American</i></b>        | 28,721     | 16        | 55.7            |
| <b><i>Non-Hispanic Asian/Pacific Islander</i></b> | 96,411     | 44        | 45.6            |
| <b><i>Hispanic, All Races</i></b>                 | 347,459    | 452       | 130.1           |

\*Rates are per 100,000 persons

## Gender

Between 2013 and 2017, the newly diagnosed HIV population differed from the overall prevalence based on race/ethnicity, but remained relatively stagnant among gender. For this reason, gender is analyzed with a race/ethnicity breakdown. As seen in Figure 23, black female incidence was two points higher than prevalence during this period. White male incidence was 7 points lower and Hispanic male incidence was 5 points higher than their respective prevalence totals. The trends are in part reflecting the demographic shifts in Kansas, but still impact minority populations more heavily.

**Figure 23: HIV Prevalence and Incidence by Sex at Birth and Race**



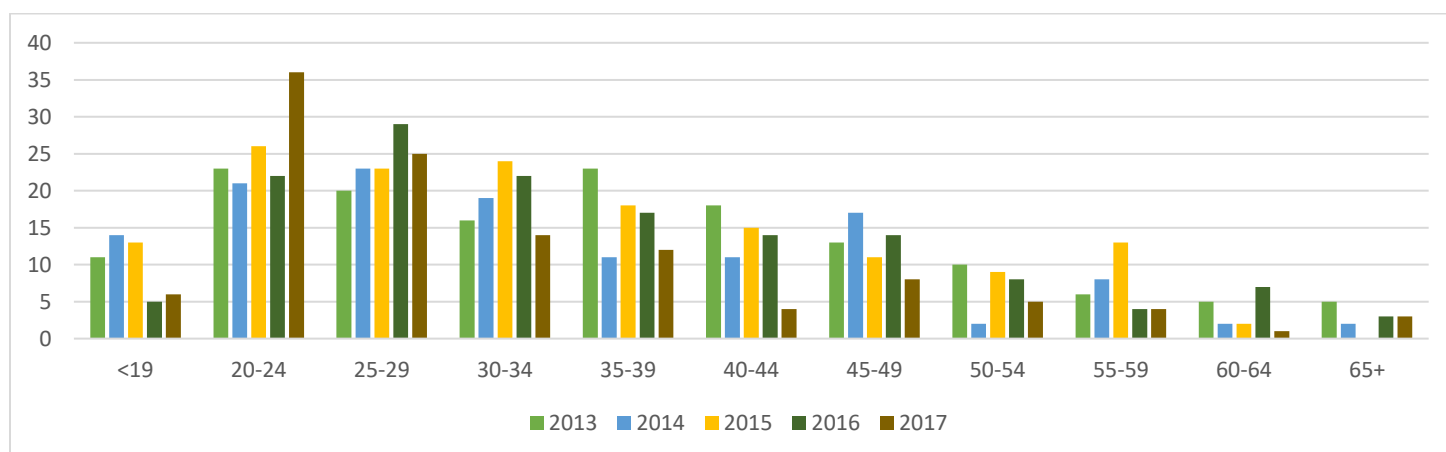
**Table 10: HIV Prevalence of HIV Among Kansas Residents by Sex at Birth, 2017**

|               | Population | HIV Count | Rates |
|---------------|------------|-----------|-------|
| <b>Male</b>   | 1,451,956  | 2,378     | 163.8 |
| <b>Female</b> | 1,461,167  | 549       | 37.6  |

## Age

In 2017, persons 20 to 29 years of age accounted for more than half (51.7%) of new diagnoses in Kansas. There was a significant spike in the incidence for the 20-24 age group (Figure 24). After investigation into the reasons why this spike occurred surveillance could not find an underlying factor. Preliminary data for 2018 shows Kansas is on track to have higher than average incidence numbers among the 20-24 and 25-29 age groups. The average age for a person diagnosed with HIV in 2017 was 31.9 years.

**Figure 24: Newly Reported HIV Among Kansas Residents by Age at Diagnosis (2013-2017)**



The average age of someone living with HIV in Kansas is 46.5 years. As of 2017, 42.9% of PLWH in Kansas are under the age of 45. The average age of diagnosis among PWLH in Kansas is 33.6 years while the average age for newly diagnosed persons between 2013 and 2017 was 34.7 years. Table 11 is an illustration of the age demographics for HIV-positive Kansans compared with the general population.

**Table 11: Prevalence of HIV Among Kansas Residents by Current Age, 2017**

|                 | 2017 Population | 2017 HIV Count | 2017 HIV Rate* |
|-----------------|-----------------|----------------|----------------|
| <b>0 to 4</b>   | 193,139         | 2              | 1.0            |
| <b>5 to 9</b>   | 199,804         | 6              | 3.0            |
| <b>10 to 14</b> | 200,285         | 15             | 7.5            |
| <b>15 to 19</b> | 200,277         | 14             | 7.0            |
| <b>20 to 24</b> | 215,302         | 109            | 50.6           |
| <b>25 to 29</b> | 193,961         | 230            | 118.6          |
| <b>30 to 34</b> | 189,826         | 278            | 146.4          |
| <b>35 to 39</b> | 187,477         | 271            | 144.6          |
| <b>40 to 44</b> | 164,290         | 331            | 201.5          |
| <b>45 to 49</b> | 168,668         | 398            | 236.0          |
| <b>50 to 54</b> | 176,887         | 455            | 257.2          |
| <b>55 to 59</b> | 193,787         | 401            | 206.9          |
| <b>60 to 64</b> | 179,857         | 231            | 128.4          |
| <b>65 to 69</b> | 147,112         | 122            | 82.9           |
| <b>70 to 74</b> | 107,945         | 41             | 38.0           |
| <b>75 to 79</b> | 74,816          | 17             | 22.7           |
| <b>80 to 84</b> | 54,748          | 5              | 9.1            |
| <b>85 +</b>     | 64,942          | 1              | 1.5            |
| <b>Total</b>    | 2,913,123       | 2,927          | 100.5          |

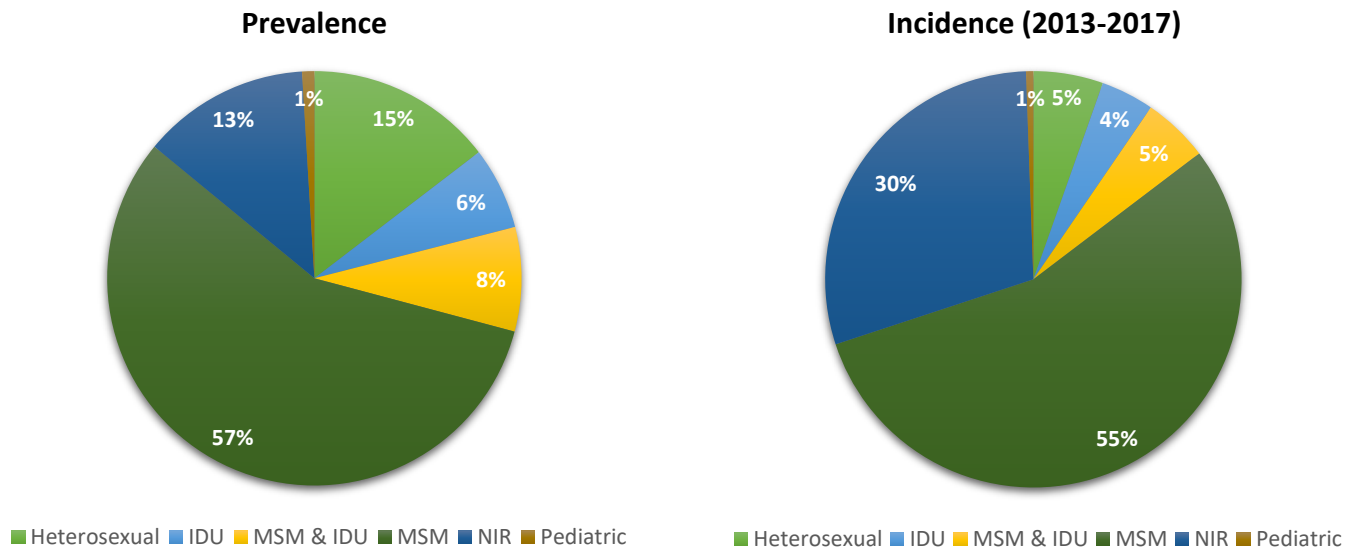
\*Case rates are per 100,000 people

### **Transmission Category**

The mode of exposure examines behaviors that put persons at risk for becoming infected with HIV. The categories include: men who have sex with men (MSM), injection drug users (IDU), MSM/IDU, high risk heterosexual contact, pediatric birth to an infected mother, or no identified risk (NIR). High risk heterosexual contact are instances where a person had contact with an opposite sex partner who engaged in high-risk activities such as injection drug use. People labeled with NIR often include females whose partners have an undetermined high-risk factor and people unwilling to provide accurate information about their sexual or drug activities.

Between 2013 and 2017, the majority of new cases were from MSM contact. All categories are down in the incidence graph on Figure 25 from their respective prevalence numbers except for NIR, which is 17 points higher. Possible reasons for the increase may be errors in collecting and entering mode of transmission data and stigmatization within one's family or community. Stigma may be rooted from attitudes toward HIV, attitudes toward same-sex relationships, or attitudes toward drug use.

**Figure 25: HIV Incidence and Prevalence by Exposure Category**



### Stage 3 Diagnosis

Late diagnosis of HIV infection is associated with increased morbidity, mortality, and health-care costs. A late diagnosis is defined as an individual whose HIV disease has already progressed to Stage 3 at the time of diagnosis or progresses to Stage 3 within 12 months of initial HIV diagnosis, as shown earlier with Figure 16 and Figure 18. A late diagnosis represents missed opportunities for testing, prevention, and medical care.

Stage 3 diagnoses are linked with several negative consequences for the individual and the public. Persons with a Stage 3 diagnosis are often at an increased risk for HIV-related mortality, opportunistic infections, poorer response to medications, and higher medical costs. There were 322 new Stage 3 cases from 2013 to 2017 in which 68% of these cases were patients whose initial CD4 was below 200 cells/uL. On average, it took 3.8 years for these patients to progress from HIV to Stage 3. Currently, there are 1,510 people in Kansas living with Stage 3 HIV where the average amount of time to progress to Stage 3 was 2.8 years.

In 2017, there were 58 new Stage 3 diagnoses in Kansas, 25 (or 43%) being newly diagnosed with HIV as well. The remaining Stage 3 incident cases were people diagnosed with HIV in years spanning from 1985 to 2016. Figure 26 shows the ten-year trend for Stage 3 incidence in Kansas.

**Figure 26: Stage 3 Incidence in Kansas (2008-2017)**

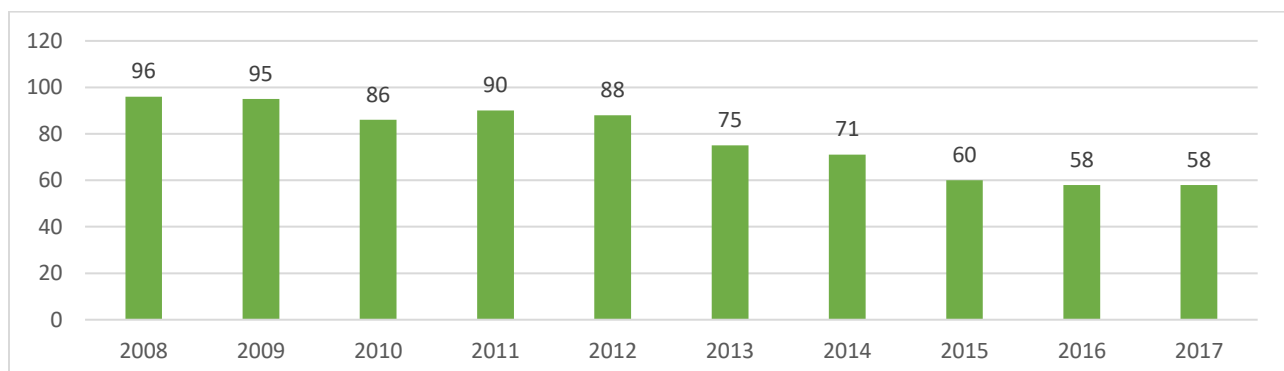
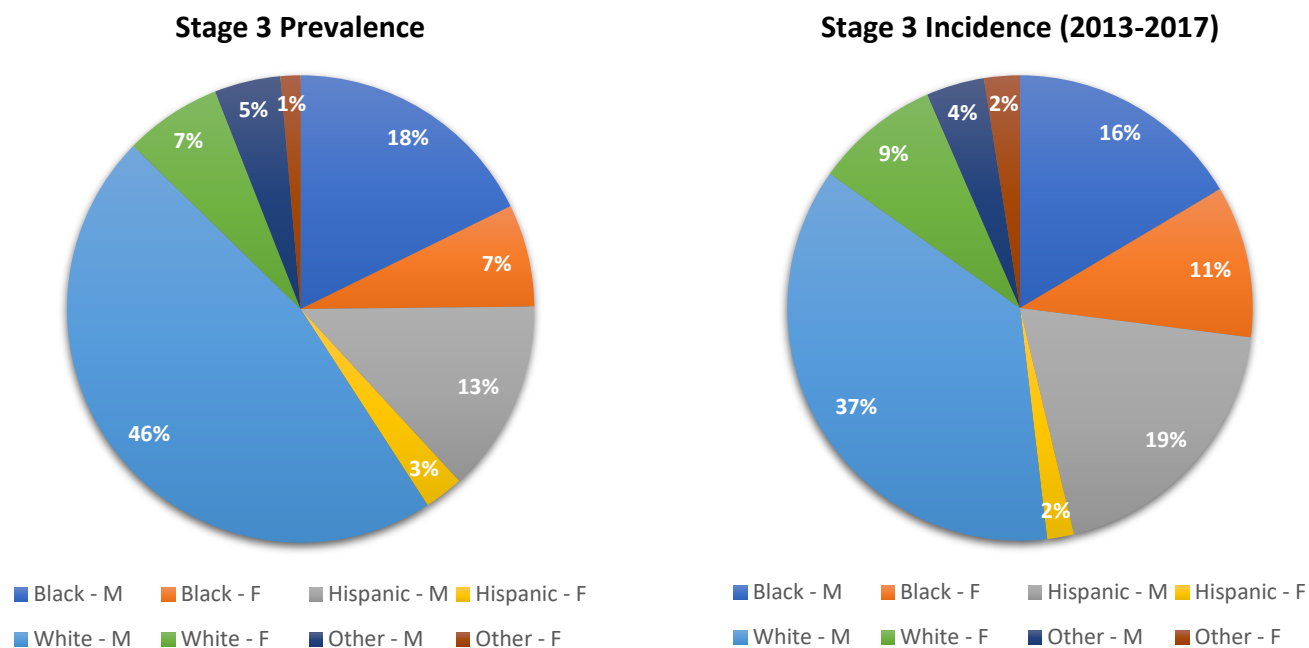


Figure 27 shows an increase in the proportion of Stage 3 incidence among males and females between 2013 and 2017 with females making up 24% of new Stage 3 cases compared to the prevalence total of 18%. Black females make up the majority of the increase among females during this period. Among males, Stage 3 incidence among white persons was 37% compared to 46% of prevalence. The Hispanic male population is seeing a substantial increase in the share of Stage 3 incidence with 19% of all new cases between 2013 and 2017 while making up 13% of prevalence.

**Figure 27: Stage 3 Prevalence and Stage 3 Incidence by Race/Ethnicity and Sex at Birth**



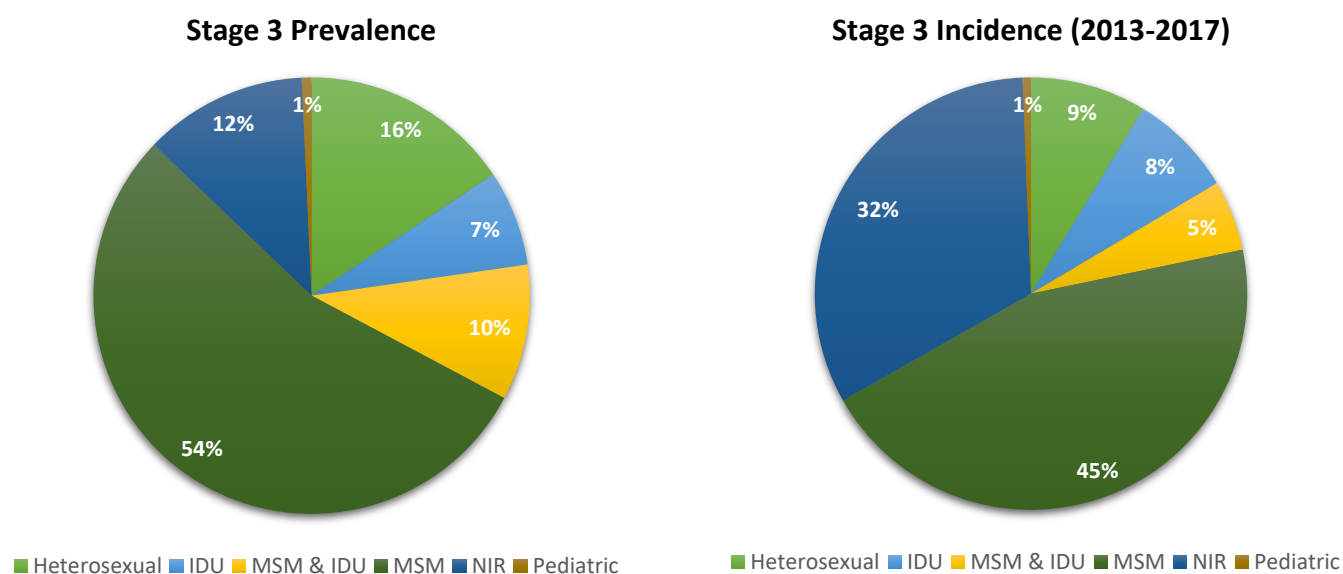
A Stage 3 diagnosis was most likely to occur among people between the ages of 30 and 49 (53.8%) as shown on Table 12. The higher age averages among people diagnosed with Stage 3 than those diagnosed with HIV is most likely a combination of the amount of time it takes for people diagnosed with HIV to progress to Stage 3 based on their treatment history and the amount of people diagnosed late with HIV and Stage 3 concurrently or within the same year.

**Table 12: Stage 3 Incidence by Age at Stage 3 Diagnosis (2013-2017)**

|                       | HIV Count | Percentage |
|-----------------------|-----------|------------|
| <b>0 to 4 years</b>   | 0         | 0.0%       |
| <b>5 to 9 years</b>   | 1         | 0.3%       |
| <b>10 to 14 years</b> | 0         | 0.0%       |
| <b>15 to 19 years</b> | 5         | 1.6%       |
| <b>20 to 24 years</b> | 22        | 6.8%       |
| <b>25 to 29 years</b> | 33        | 10.3%      |
| <b>30 to 34 years</b> | 41        | 12.7%      |
| <b>35 to 39 years</b> | 50        | 15.5%      |
| <b>40 to 44 years</b> | 41        | 12.7%      |
| <b>45 to 49 years</b> | 41        | 12.7%      |
| <b>50 to 54 years</b> | 31        | 9.6%       |
| <b>55 to 59 years</b> | 28        | 8.7%       |
| <b>60 to 64 years</b> | 19        | 5.9%       |
| <b>65 to 69 years</b> | 5         | 1.6%       |
| <b>70 to 74 years</b> | 4         | 1.2%       |
| <b>75 to 79 years</b> | 1         | 0.3%       |

There is a substantial number of persons diagnosed with Stage 3 between 2013 and 2017 with no risks identified; this hinders the ability to precisely analyze the trends of exposure category over time. However, while 14% of all HIV-positive persons are identified as IDU, Figure 28 shows that 17% of people living with a Stage 3 diagnosis are IDUs. On the other hand, 54% of people with a Stage 3 diagnosis are identified as MSM compared to 57% among all PLWH.

**Figure 28: Stage 3 Prevalence and Stage 3 Incidence by Exposure Category**



## Death Ascertainment

Monitoring the cause of death information is helpful in determining how much of a factor HIV plays in the health of PLWH and their trends over time. Table 13 is an overview of the leading causes of death in Kansas for the general population in 2017 where heart disease and cancer are at the top. Both causes of death for the general population are also among the top causes of death for HIV-positive persons.

**Table 13: Leading Causes of Death in the State of Kansas, 2017**

|  | Count | KS Rate |
|--|-------|---------|
| <b>1. Heart Disease</b>                      | 5,636 | 193.5   |
| <b>2. Cancer</b>                             | 5,391 | 185.1   |
| <b>3. Chronic Lower Respiratory Diseases</b> | 1,816 | 62.3    |
| <b>4. Cerebrovascular Disease</b>            | 1,327 | 45.6    |
| <b>5. Alzheimer's Disease</b>                | 886   | 30.4    |
| <b>6. Diabetes</b>                           | 864   | 29.7    |
| <b>7. Digestive Disease</b>                  | 674   | 23.1    |
| <b>8. Suicide</b>                            | 544   | 18.7    |
| <b>9. Pneumonia and Influenza</b>            | 540   | 18.5    |
| <b>10. Kidney Disease</b>                    | 531   | 18.2    |

From 1999 to 2012, 67.8% of the deceased HIV population in Kansas died from HIV-related illnesses. There were 226 deaths among HIV-positive persons between 2013 and 2017. 50% of all causes of death in this period were from HIV-related illnesses while cancer and heart disease increased from their 1999-2012 averages, as shown on Table 14 and Table 15.

**Table 14: Leading Causes of Death Among Kansans Living with HIV (1999-2012)**

|  | Count | Percent |
|--|-------|---------|
| <b>1. HIV or HIV-Related Illnesses</b>   | 392   | 67.8%   |
| <b>2. Cancer</b>   | 43    | 7.4%    |
| <b>3. Heart Disease</b>  | 15    | 2.6%    |
| <b>4. Direct Infection of Hand or Knee in Infectious or Parasitic Diseases</b> | 10    | 1.7%    |
| <b>5. Diabetes-Related Causes</b>  | 7     | 1.2%    |
| <b>6. Suicide</b>  | 7     | 1.2%    |

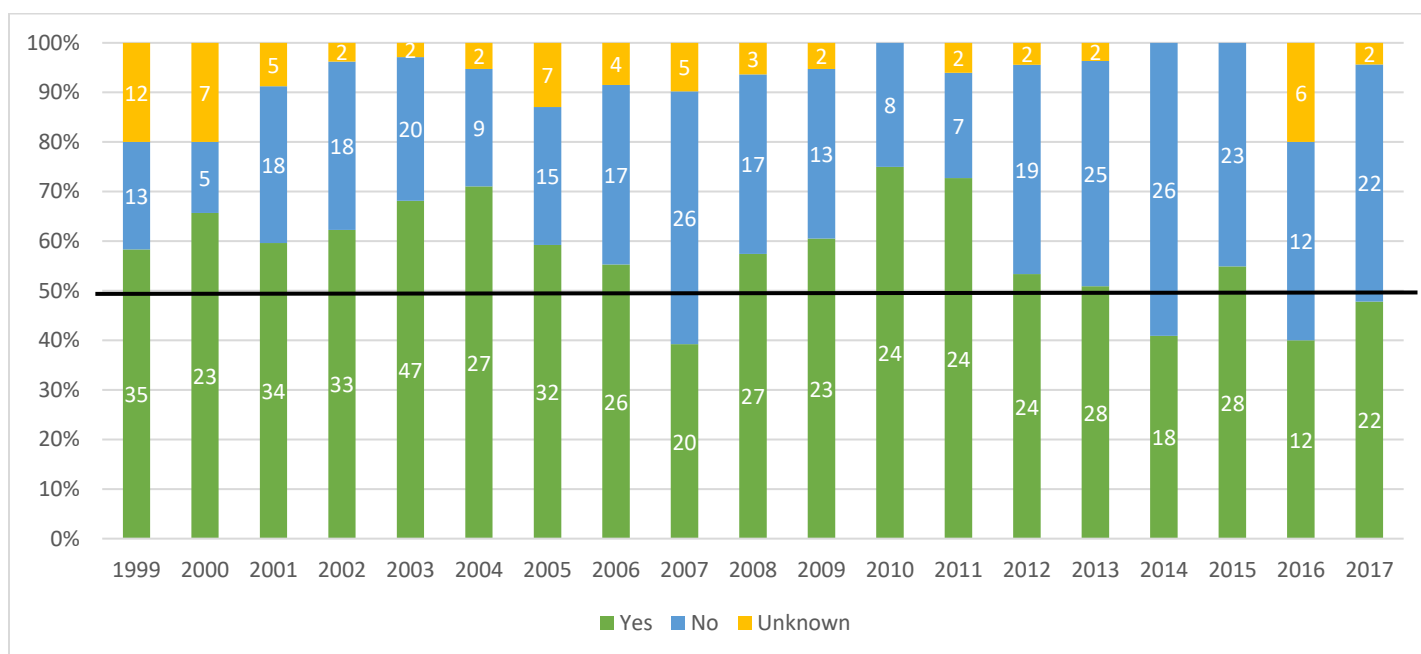
**Table 15: Leading Causes of Death Among Kansans Living with HIV (2013-2017)**

|   | Count | Percent |
|---|-------|---------|
| <b>1. HIV or HIV-Related Illnesses</b>          | 108   | 50%     |
| <b>2. Cancer</b>                                | 22    | 10.2%   |
| <b>3. Heart Disease</b>                         | 11    | 5.1%    |
| <b>4. Suicide</b>                               | 10    | 4.6%    |
| <b>5. Chronic Obstructive Pulmonary Disease</b> | 7     | 3.7%    |
| <b>6. Diabetes</b>                              | 7     | 3.7%    |

Figure 29 is a breakdown for HIV-related deaths since 1999. The trendline begins at 1999 due to the switch to ICD-10 codes for the National Death Index (NDI) maintained by the National Center for Health Statistics. International Classification of Diseases (ICD) is a medical list of procedures and diseases by the World Health Organization (WHO). ICD-10 was first used in 1994, but was not mandatory in the United States until 2015.

In this report, cause of death information for PLWH in Kansas are sourced from NDI and KDHE's OVS and primarily use ICD-10 classifications in all years. Since 1999, there have been four years where the population primarily died of causes not related to HIV in which three of these occurrences are from the past five years.

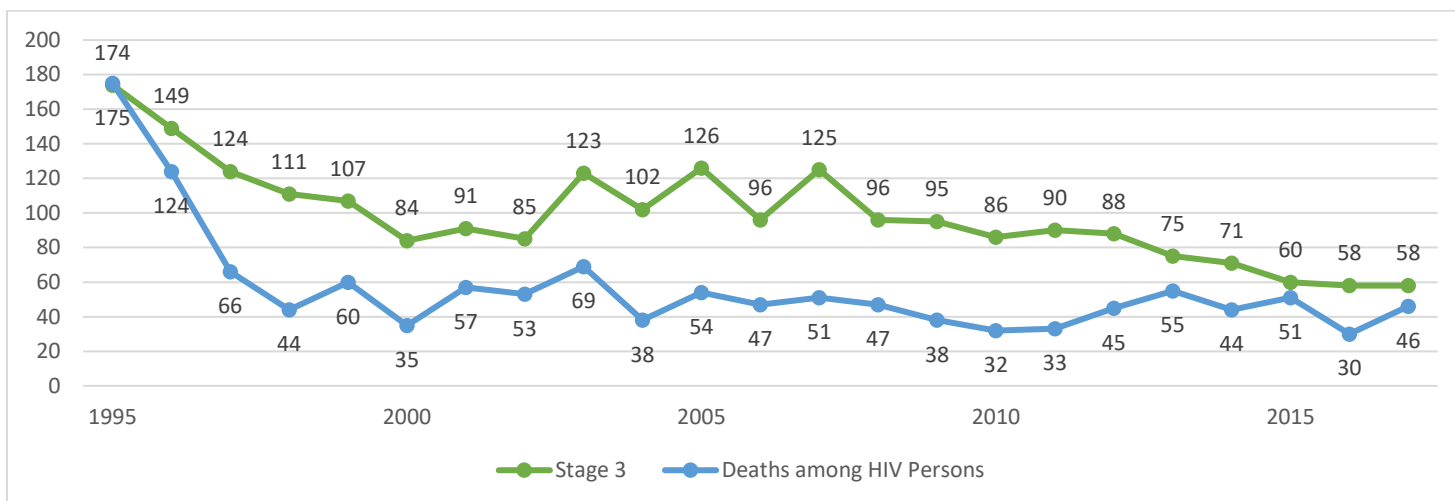
**Figure 29: Death Due to HIV Among HIV-Positive Kansans**



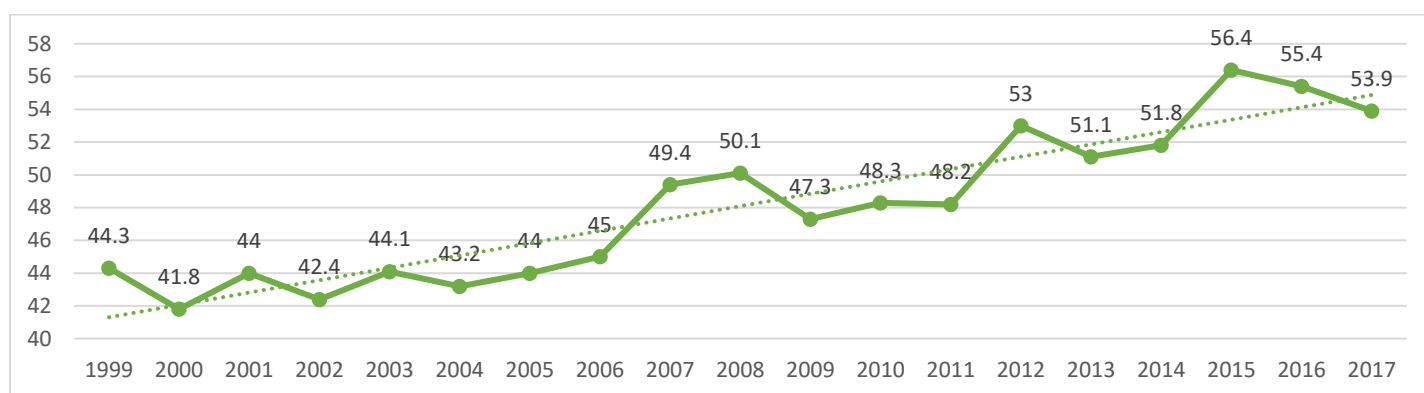
Most research has shown a relationship between incidence of Stage 3 cases and the number of deaths. However, the gap between Stage 3 diagnoses and deaths among HIV-positive persons gets thinner beginning in 2010 with total number of deaths remaining relatively stagnant since 2004, shown on Figure 30. One possible reason is that the decline in Stage 3 diagnoses is matched with an aging HIV population that are dying at similar rates but from other causes.

Figure 31 is an illustration for the average age of death among PLWH in Kansas, which shows an upward trend since 1999. This is not to be mistaken for life expectancy since many factors play into the average life of someone with HIV, such as the age they were diagnosed and their initial CD4 value.

**Figure 30: Newly Reported Stage 3 Diagnoses and Deaths Among HIV-Positive Kansans (1995-2017)**



**Figure 31: Average Age of Death Among HIV-Positive Kansans (1999-2017)**



Between 1999 and 2003, HIV-positive persons who died averaged 6.3 years of life after diagnosis. From 2013 to 2017, this average increased to 12.6 years after diagnosis. For people diagnosed between the ages of 20 and 24 that died during this period, the average years of life after diagnosis was 13.2 years, which indicates that life expectancy will continue to increase in the years to come. If the numbers increase at the same rate, the average life expectancy after diagnosis will be 25.2 years by 2027-2031 and approximately 28 years for those diagnosed between the ages of 20 and 24. Overall, 24% of PLWH that died between 2013 and 2017 lived more than 20 years after diagnosis.

## Socioeconomic Factors

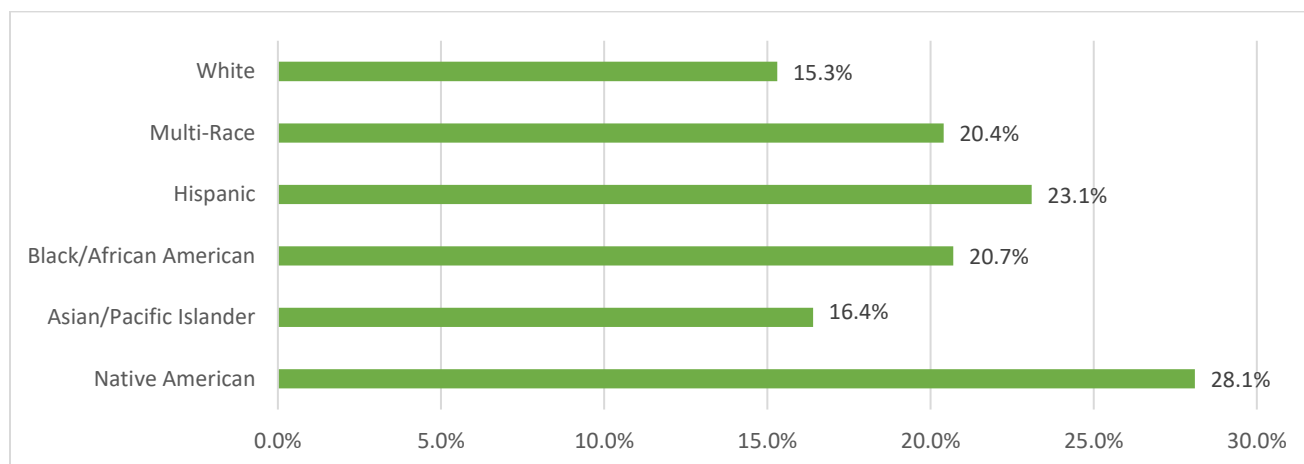
Socioeconomic data is measured at the census tract level. A census tract is roughly the size of a neighborhood that consists of a population between 2,500 to 8,000 people established by the Census Bureau. Census tracts may change over time but remain relatively static. Measuring socioeconomic data at the census tract level allows one to scale the quality of life of Kansans by obtaining an estimate for poverty rates, unemployment rates, education, etc. The data was obtained by combining the 2017 information from the Kansas eHARS database with the 2011-2015 Neighborhood Socioeconomic Status (NSES) Index in ArcGIS then exporting the combined dataset to analyze with SAS Base 9.4.

The sample size of the geocoded data from ArcGIS consisted of 2,358 HIV-positive persons out of the total Kansas HIV population of 2,927. Patients that were left out of the analysis includes incarcerated patients, patients who only have a PO Box listed as their address, and patients whose addresses were unsuccessfully standardized for import into ArcGIS. Two-hundred and thirty-two patients were deleted for the analysis for having a PO Box or correctional facility listed as their address and 337 patients did not successfully import into the dataset.

The NSES Index consists of data compiled from the U.S. Census Bureau's American Community Survey. Therefore, the graphs in this section will show the averages discussed in Section 1 using the 2012-2016 ACS data while showing the analyzed 2011-2015 census-tract data for the HIV population. The gradual differences reflected between the two years in the first section will result in minimal discrepancies and will achieve the goal of ascertaining the estimates for social determinants of health for PLWH.

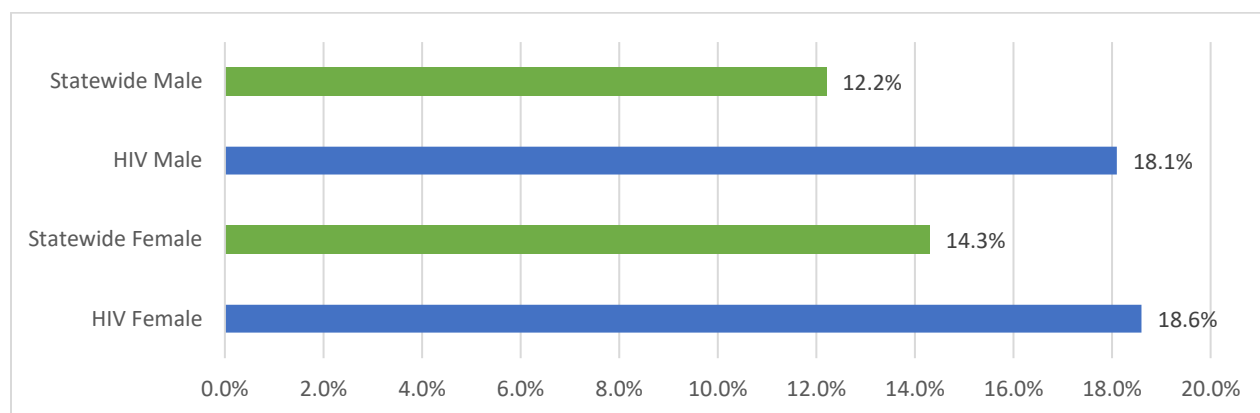
Among HIV-positive Kansans, four racial/ethnic groups' populations have poverty rates greater than 20%. As shown in Figure 32, the greatest among these groups is the Native American HIV population where an estimated 28.1% of these individuals are living below the poverty line. While the minority inhabitants make up the bulk of HIV persons living in poverty, many of them—Hispanic, Multi-Race, and Black HIV populations—are living with lower rates of poverty than their respective statewide averages. The White HIV poverty rate (15.3%) is significantly higher than its statewide average (10.4%).

**Figure 32: Poverty Rates Among Kansans Living with HIV by Race/Ethnicity**



Similar to the statewide discrepancies of poverty rates between males and females, HIV-positive females are also more likely to be living under the circumstances of poverty than HIV-positive males by 0.5 points (Figure 33). With the discrepancies in poverty rates and a rising minority HIV population, if similar trends continue, it is likely that the number of HIV-positive Kansans living below the poverty line will rise. In return, this will lead to a higher demand in available services to support the care and treatment of those diagnosed with HIV.

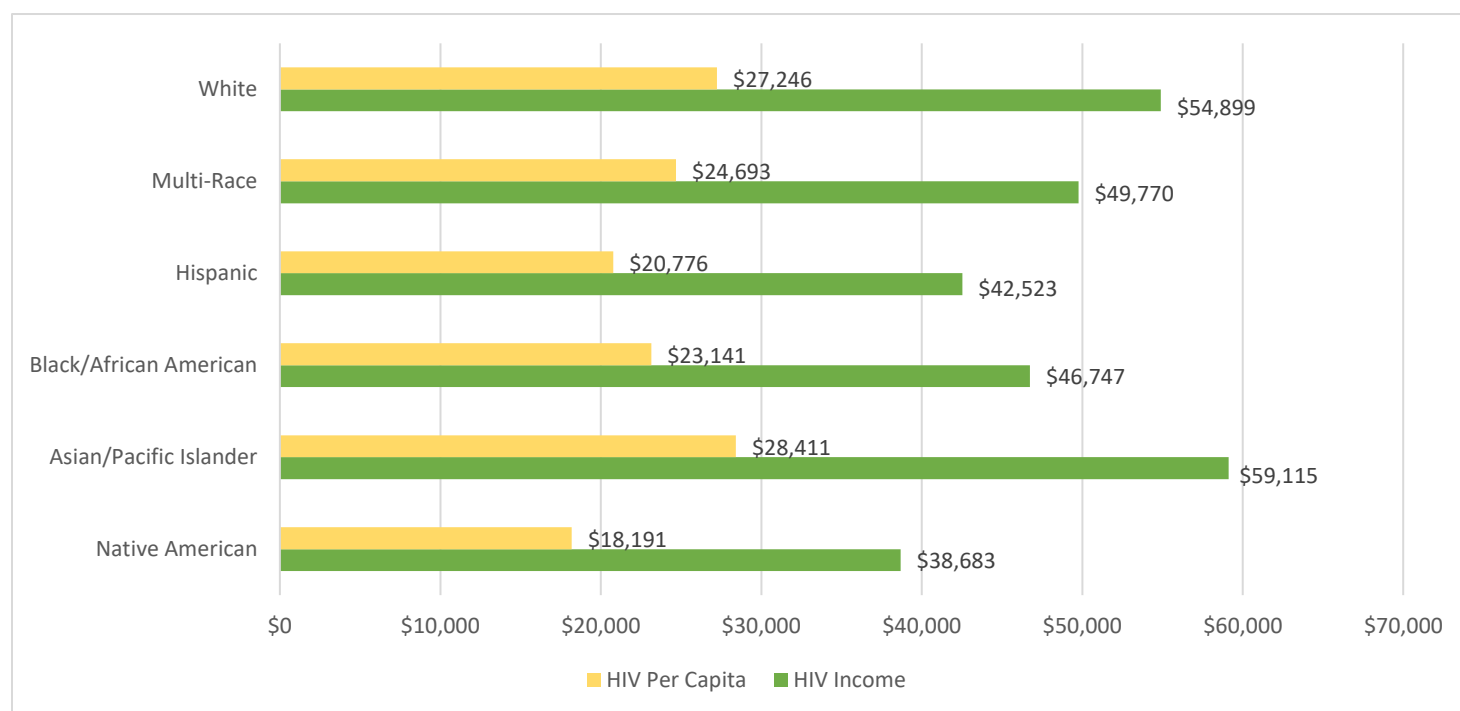
**Figure 33: Poverty Rates Among Kansans Living with HIV by Sex at Birth**



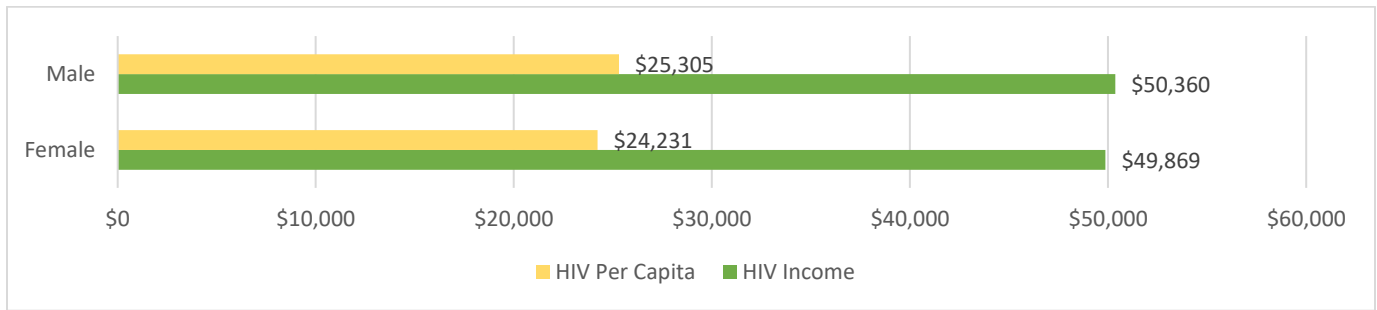
The data in Figure 34 measuring median household income reflects a similar conclusion from the poverty information mentioned in Figure 32. For instance, the Hispanic, Multi-Race, and Black HIV populations that live at lower poverty rates than their respective statewide averages also achieve a higher median household income while the remaining three groups earn less than their statewide average. Despite earning less than the statewide average, White and Asian HIV-positive Kansans remain the top household wage earners. Figure 34 also shows less discrepancy between per capita income and median household income among Hispanics living with HIV than the general population totals from Section 1.

While the ACS 2012-2016 data did not show household income and per capita income across gender lines, Figure 35 shows that the female HIV population earn slightly less than the male HIV population.

**Figure 34: Average Median Household Income and Per Capita Income Among HIV-Positive Kansans by Race/Ethnicity**

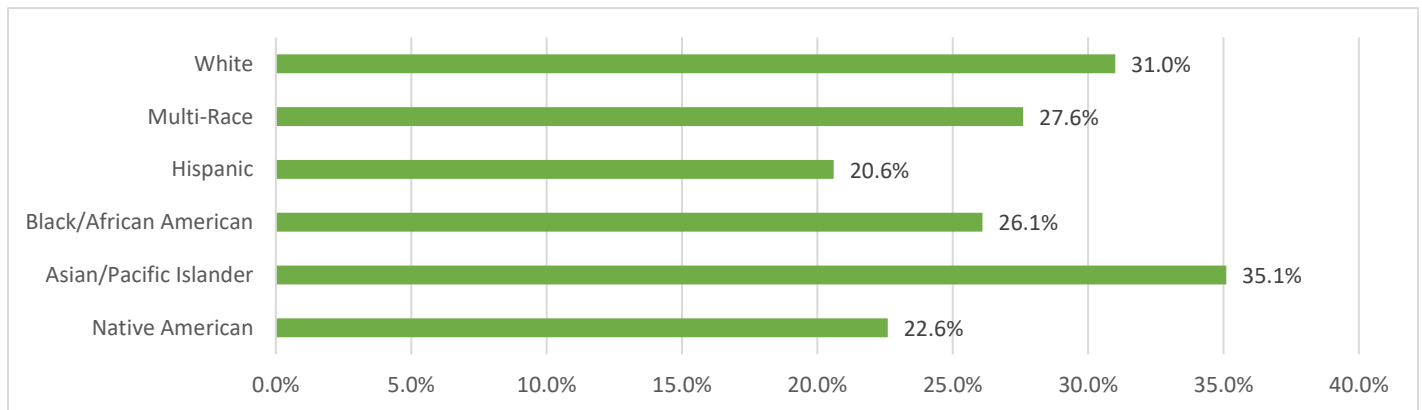


**Figure 35: Average Median Household Income Among HIV-Positive Kansans by Sex at Birth**



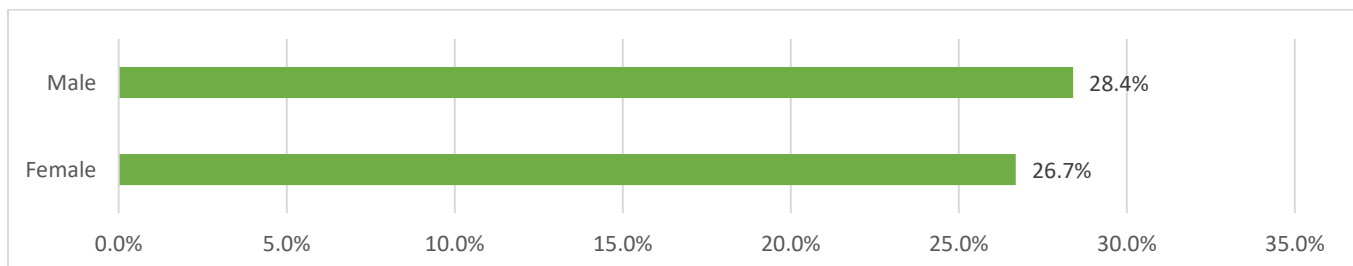
People who receive a higher level of education often obtain higher income levels and lead healthier lives, which makes the variable useful for analyzing the lifestyle of HIV-Positive Kansans. In Figure 36, the Hispanic, Multi-Race, and Black HIV populations are more likely to have graduated college with a bachelor's degree or higher than their respective statewide averages. Hispanic HIV individuals achieve these results nearly twice as much as their statewide averages. White and Asian populations achieve these results at lower rates than their respective averages. The HIV Native American population is more likely to complete a bachelor's degree but still have lower household incomes and higher rates of poverty.

**Figure 36: Percentage of HIV-Positive Kansans Age 25+ with a Bachelor's Degree by Race/Ethnicity**



While females in the general Kansas population are more likely to hold a bachelor's degree or higher, the male HIV-positive population that have a bachelor's degree is higher than the female HIV-positive population. However, both averages are lower than the general populations. The state of Kansas will work on stratifying gender variables by race/ethnicity in the future to gain more insight into the social determinants of health among PLWH in Kansas.

**Figure 37: Percentage of HIV-Positive Kansans Age 25+ with a Bachelor's Degree by Sex at Birth**



## Testing and Counseling in Kansas

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Although HIV diagnoses are one indication of HIV infection rates, they do not present the complete picture. Many factors may affect when or *if* a person gets tested for and diagnosed with HIV infection. Individuals who are infected and do not know they are infected may not seek testing unless they have the means, the knowledge, and/or a significant catalyst (I.E. symptoms, hospitalization, etc.). Service providers and HIV-positive persons have noted potential barriers such as: a general lack of knowledge about HIV and how it is transmitted, a person's belief that they are at risk, logistical barriers (transportation, limited hours of operation at testing sites, testing availability, etc.), language barriers, and stigma associated with HIV.

### ***Key Populations at Higher Risk for HIV Infection in Kansas***

#### **Men who have sex with men (MSM)**

According to the CDC, men who have sex with men (MSM) continue to be the group with the greatest impact of the HIV epidemic in the United States. In 2016, among all gay and bisexual men who received an HIV diagnosis, Blacks/African Americans accounted for the highest number at 38%. Gay and bisexual men aged 13-24 account for two-thirds (64%) of HIV diagnosis among all gay and bisexual men (CDC, 2018a). In Kansas, there has been a slight increase in young (13-24 year-old) persons testing positive initially. In Kansas, as of December 2017, MSM is the highest transmission category (55%) for risk of infection.

#### **Injection Drug Users (IDU)**

In Kansas between 2013-2017, on average 4% of new cases are attributed to persons who state they engage or have engaged in injection drug use (IDU). IDUs are at risk for HIV infection by sharing needles and other equipment with HIV-infected persons. Typically, other risky behaviors are accompanied with IDU practices, such as anonymous and multiple sexual partners, unprotected sexual encounters, and exchanging sexual acts for material items, food, and/or shelter.

#### **Heterosexual Contact**

During 2013-2017, the most common HIV transmission among women is heterosexual contact with a known infected person. Typically, this type of transmission has the partner being either MSM and/or IDU. People who have sex with an IDU are at increased risk for infection.

Women of child bearing age are able to pass HIV to their unborn children in utero or while breastfeeding. Often the mother contracts HIV by having sex with an IDU, sharing needles or equipment, and/or having a partner who is also MSM.

## **Other Factors**

Factors other than individual risk behavior contribute to the uneven burden of HIV infections among MSM, especially young MSM. These factors pose challenges in prevention of new HIV infections. In Kansas, due to stigma of HIV and sexual orientation, many young MSM engage in higher risk sexual encounters with anonymous partners. According to the CDC other factors to consider are, *“Stigma and homophobia, which deter some from seeking HIV prevention services; barriers such as lack of insurance and concerns about confidentiality, that result in less access to testing, care, and antiretroviral treatment”*.

Many young persons underestimate their personal risk for HIV and/or have a “I don’t care” kind of attitude. Younger generations, especially MSM, were not alive when HIV first appeared, and have only known the advances in medical technology. Young MSM assume that most diseases can be cured, or dealt with in a minimal fashion, and therefore do not understand the severity of this life-long disease.

## ***Counseling and Testing Sites in Kansas***

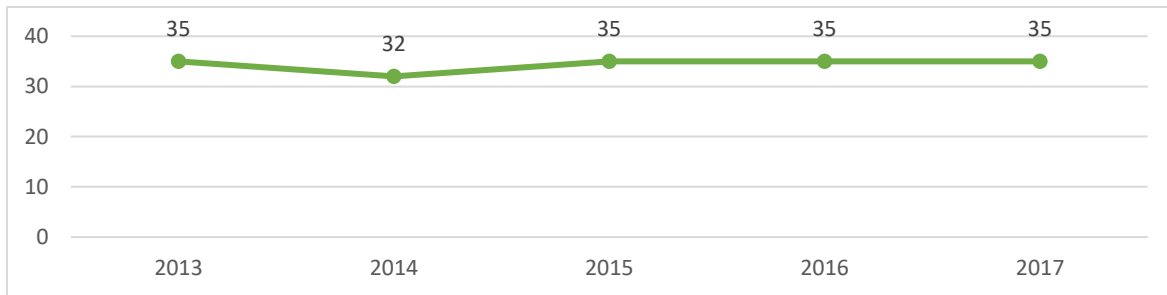
The STI/HIV Prevention Program started a new Funding Opportunity Announcement (FOA) beginning in calendar year 2012. The core components for the FOA include, HIV testing, comprehensive prevention with positives, condom distribution and policy initiatives. The HIV testing program supports efforts in both healthcare settings and non-healthcare settings. Healthcare settings include local health departments, community healthcare clinics, and correctional facilities. The HIV testing program contracted with three local health departments located in high morbidity areas of Kansas for conventional and/or rapid opt-out HIV testing. These local health departments, conducted opt-out HIV testing within STI, prenatal, maternal and infant, family planning, and tuberculosis programs for patients ages 13 to 64. As of December 2014, HIV testing was supported through an additional 24 healthcare settings to offer conventional and/or rapid testing to their clients.

Non-healthcare settings included testing done by community-based organizations (CBOs) in venues such as substance abuse treatment facilities, university campuses, and social service agencies. Funding supported rapid HIV testing and/or processing of conventional blood specimens through the Kansas Health and Environmental Laboratories (KHEL). From January 2012 to June 2014, KDHE contracted with six CBOs to conduct targeted testing. Good Samaritan Project of Kansas City, Kansas continuously did not meet the CDC requirement of a 1.0 percent positive for HIV testing in non-healthcare settings. Douglas County AIDS Project closed their doors in June 2014, and the Lawrence-Douglas County Health Department assumed the contract. July 2014 through June 2016, KDHE contracted with five CBOs to conduct targeted testing. In July 2016, the funds from Lawrence-Douglas County Health Department were redistributed among the remaining four contracted CBOs, as Lawrence-Douglas County Health Department continuously did not meet the CDC requirement of a 1.0 percent positive for HIV testing in non-healthcare settings. Beginning in July 2015, contracted CBOs focus their testing efforts on CDC identified high-risk populations including, MSM, Black/African American Women, Youth, IDU, HIV-positive persons, high-risk negatives, and those infected with TB or history of an STI.

Figure 38 shows the total number of testing sites found in Kansas. In 2013, the STI/HIV Prevention Program received a significant reduction in funds, at which time regional incidence in combination with testing data was analyzed to determine where testing resources were best allocated within the state based on disease burden.

A letter went out to the 52 affected sites in November 2012 notifying them of the decrease in funding thus enabling KDHE to continue HIV testing, and identifying alternative testing sites in their respective areas. Kansas has a state statute requiring anonymous HIV testing be available within 100 miles of any point of the state, and this statute is still met by the current supported sites. Non-funded sites were provided with a list of available rapid testing technologies and associated costs available for any site that wished to continue rapid testing independent of fiscal support from the KDHE.

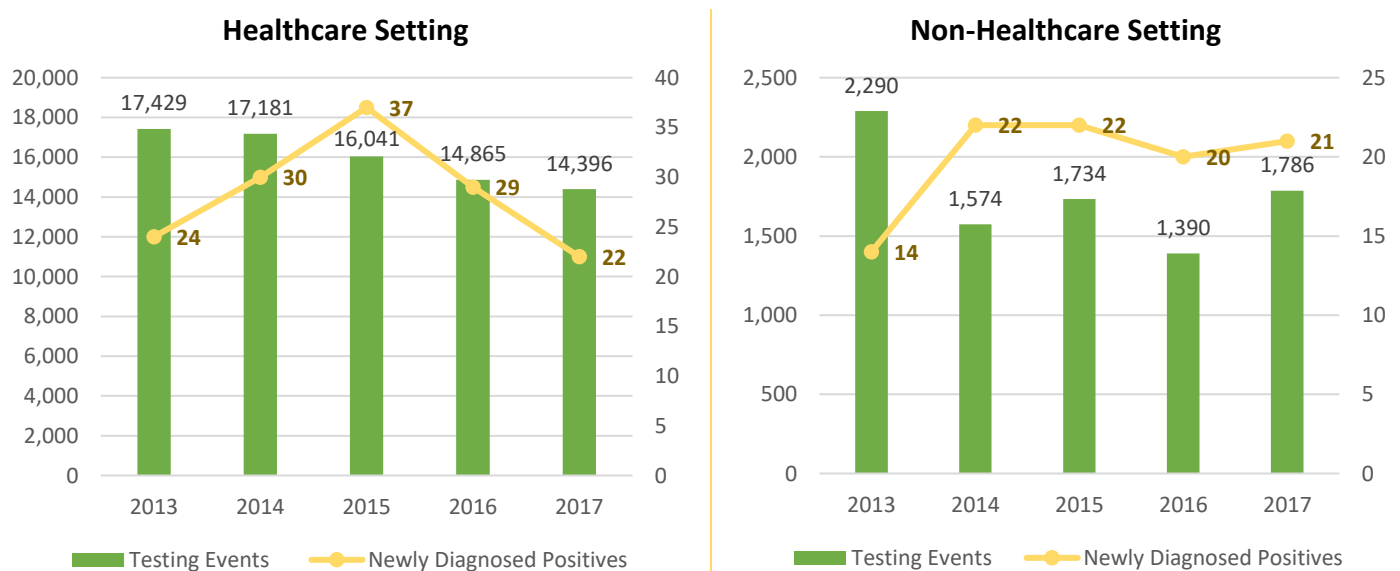
**Figure 38: Total Number of HIV Testing Sites in Kansas (2013-2017)**



Data in this profile includes only HIV testing supported and/or funded by KDHE. Participants at all HIV testing sites completed a risk assessment during their testing session. These data, include general demographics characteristics of individuals being tested, as well as specific risk behaviors, were entered into EvaluationWeb. Findings are from the years 2013-2017.

Figure 39 Healthcare Settings shows the correlation of decrease funding with testing events and newly diagnosed positives. The decrease in funding did not affect non-healthcare settings as their funding has been redistributed over time, due to decreases in contracted CBOs. Healthcare settings include all medical and clinical facilities; Non-Healthcare settings include the contracted CBOs.

**Figure 39: Healthcare and Non-Healthcare Settings Testing Events vs. Number of New HIV-Positive Diagnoses (2013-2017)**



Despite the reduced number in funds and physical testing sites, there was an increase in 2014 in newly diagnosed positives in overall incidence and Non-Healthcare setting testing. In 2014, there were 52 individuals that tested positive for HIV, yielding an overall positivity rate of 0.28% for CT sites. Table 16 illustrates the positivity rates from 2013-2017 displayed by Healthcare Settings and Non-Healthcare Settings. Table 16 shows that the Non-Healthcare settings' testing events held a higher positivity rate overall, and more than doubled percentage of positivity rates from 2013 to 2014.

**Table 16: Healthcare and Non-Healthcare Settings Positivity Rate (2013-2017)**

| Healthcare Settings Positivity Rates |       | Non-Healthcare Settings Positivity Rates |       |
|--------------------------------------|-------|--|-------|
| <b>2013</b>                          | 0.14% | <b>2013</b>                              | 0.61% |
| <b>2014</b>                          | 0.17% | <b>2014</b>                              | 1.40% |
| <b>2015</b>                          | 0.23% | <b>2015</b>                              | 1.27% |
| <b>2016</b>                          | 0.20% | <b>2016</b>                              | 1.44% |
| <b>2017</b>                          | 0.15% | <b>2017</b>                              | 1.18% |

Non-Healthcare settings focus on building trust and rapport with the community, this has been vital to prevention and testing efforts. All of the CBOs have initiated social networking and community-level strategies to counter stigma, misconceptions, and provide a safe atmosphere for anyone who wants to be tested.

**Table 17: Healthcare Setting Testing Events, Clients Reporting Ever Testing for HIV by Sex at Birth (2013-2017)**

|                | 2013   |       | 2014   |       | 2015   |       | 2016   |       | 2017   |       |
|----------------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|
|                | Yes    | No    | Yes    | No    | Yes    | No    | Yes    | No    | Yes    | No    |
| <b>Male</b>    | 2,988  | 1,657 | 3,055  | 1,805 | 3,317  | 1,629 | 3,385  | 1,698 | 3,517  | 1,641 |
| <b>Female</b>  | 9,801  | 2,630 | 9,130  | 2,687 | 7,411  | 2,206 | 6,789  | 1,742 | 6,736  | 1,727 |
| <b>Overall</b> | 12,789 | 4,287 | 12,185 | 4,492 | 10,728 | 3,835 | 10,174 | 3,440 | 10,253 | 3,368 |

Table 17 indicates that overall from 2013-2017, persons having ever been tested for HIV in healthcare settings has been decreasing. There was a slight increase in overall testing in 2017. Males having ever been tested for HIV has increased from 2013-2017, and females having ever been tested for HIV has decreased from 2013-2017. These data do not include persons who were not asked, didn't know, or declined to provide previous HIV testing history.

**Table 18: Non-Healthcare Settings Testing Events, Clients Reporting Ever Testing for HIV by Sex at Birth (2013-2017)**

|                | 2013  |     | 2014  |     | 2015  |     | 2016  |     | 2017  |     |
|----------------|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|
|                | Yes   | No  | Yes   | No  | Yes   | No  | Yes   | No  | Yes   | No  |
| <b>Male</b>    | 1,148 | 422 | 823   | 251 | 903   | 351 | 814   | 222 | 938   | 308 |
| <b>Female</b>  | 341   | 221 | 269   | 152 | 250   | 145 | 195   | 87  | 225   | 127 |
| <b>Overall</b> | 1,489 | 643 | 1,092 | 403 | 1,153 | 496 | 1,009 | 309 | 1,163 | 435 |

Table 18 indicates that overall from 2013-2017, persons having ever been tested for HIV in non-healthcare settings has been decreasing. Males and females having ever been tested for HIV has decreased from 2013-2017. These data do not include persons who were not asked, didn't know, or declined to provide previous HIV testing history.

**Table 19: Healthcare Setting Testing Events, Clients Reporting Ever Testing for HIV by Age Group (2013-2017)**

|              | 2013  |       | 2014  |       | 2015  |     | 2016  |     | 2017  |     |
|--------------|-------|-------|-------|-------|-------|-----|-------|-----|-------|-----|
|              | Yes   | No    | Yes   | No    | Yes   | No  | Yes   | No  | Yes   | No  |
| <b>14-19</b> | 752   | 852   | 791   | 824   | 563   | 696 | 526   | 582 | 574   | 619 |
| <b>20-24</b> | 2,822 | 1,185 | 2,493 | 1,210 | 2,218 | 998 | 2,104 | 909 | 2,072 | 908 |
| <b>25-29</b> | 3,080 | 756   | 2,821 | 829   | 2,628 | 810 | 2,402 | 639 | 2,381 | 658 |
| <b>30-34</b> | 2,463 | 531   | 2,391 | 542   | 2,009 | 484 | 1,906 | 423 | 1,913 | 396 |
| <b>35-39</b> | 1,656 | 304   | 1,577 | 375   | 1,491 | 327 | 1,403 | 327 | 1,475 | 321 |
| <b>40+</b>   | 2,024 | 656   | 2,120 | 710   | 1,834 | 525 | 1,863 | 558 | 1,863 | 469 |

Table 19 indicates that the highest age group having ever been tested for HIV in healthcare settings is the 25-29 age group, closely followed by the 20-24 age group. The lowest age group having ever been tested for HIV is the 14-19 age group. These data do not include persons who were not asked, didn't know, or declined to provide previous HIV testing history.

**Table 20: Non-Healthcare Setting Testing Events, Clients Reporting Ever Testing for HIV by Age Group (2013-2017)**

|              | 2013 |     | 2014 |     | 2015 |     | 2016 |     | 2017 |     |
|--------------|------|-----|------|-----|------|-----|------|-----|------|-----|
|              | Yes  | No  | Yes  | No  | Yes  | No  | Yes  | No  | Yes  | No  |
| <b>14-19</b> | 40   | 86  | 16   | 44  | 30   | 61  | 28   | 28  | 40   | 62  |
| <b>20-24</b> | 324  | 235 | 205  | 123 | 208  | 156 | 186  | 111 | 215  | 127 |
| <b>25-29</b> | 298  | 106 | 257  | 73  | 277  | 99  | 205  | 58  | 241  | 79  |
| <b>30-34</b> | 233  | 44  | 155  | 45  | 170  | 67  | 188  | 31  | 223  | 65  |
| <b>35-39</b> | 149  | 33  | 102  | 35  | 133  | 24  | 106  | 16  | 136  | 40  |
| <b>40+</b>   | 449  | 143 | 359  | 85  | 342  | 89  | 300  | 66  | 327  | 66  |

Table 20 indicates that the highest age group having ever been tested for HIV in non-healthcare settings is the 40+ age group. The lowest age group having ever been tested for HIV is the 14-19 age group. These data do not include persons who were not asked, didn't know, or declined to provide previous HIV testing history.

### ***Demographic Analysis of Individuals Receiving HIV tests by Gender, Race, Ethnicity, & Mode of Transmission***

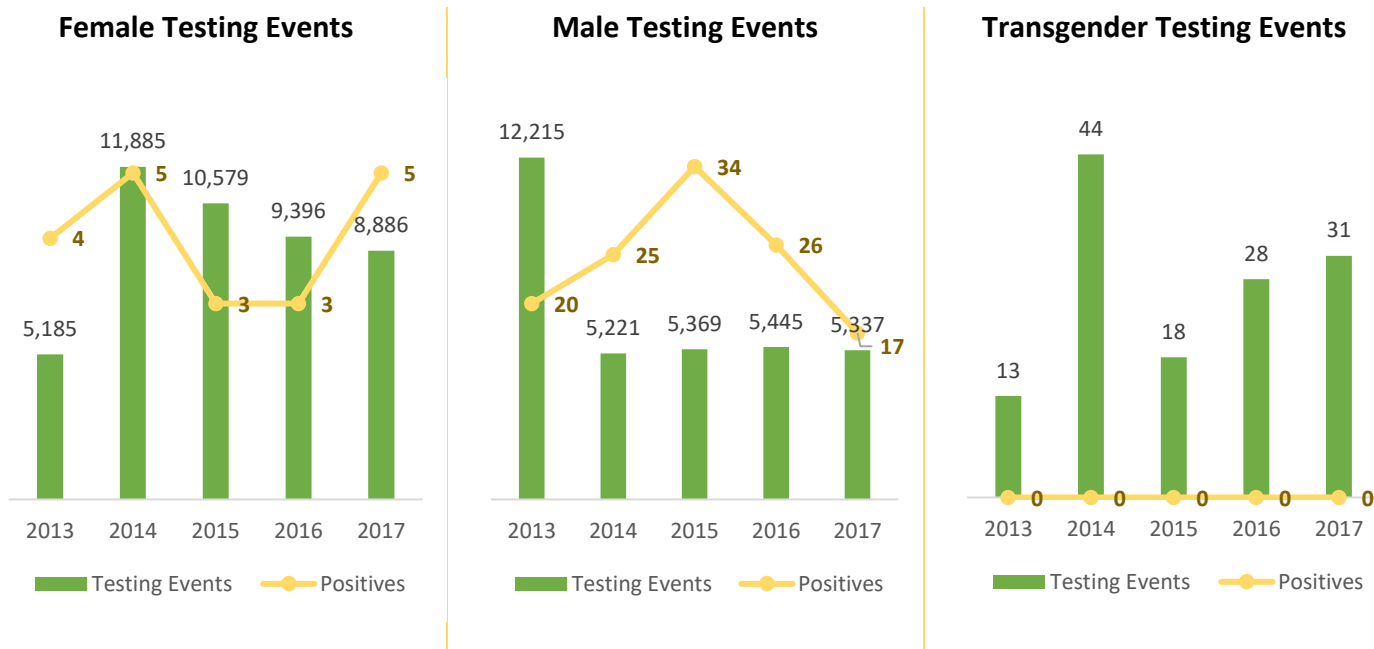
#### **Gender**

Healthcare Settings conduct routine HIV screening. In 2014, in Healthcare Settings there were overall more testing events for females (11,885) when compared to males (5,221). Non-Healthcare Settings focus their

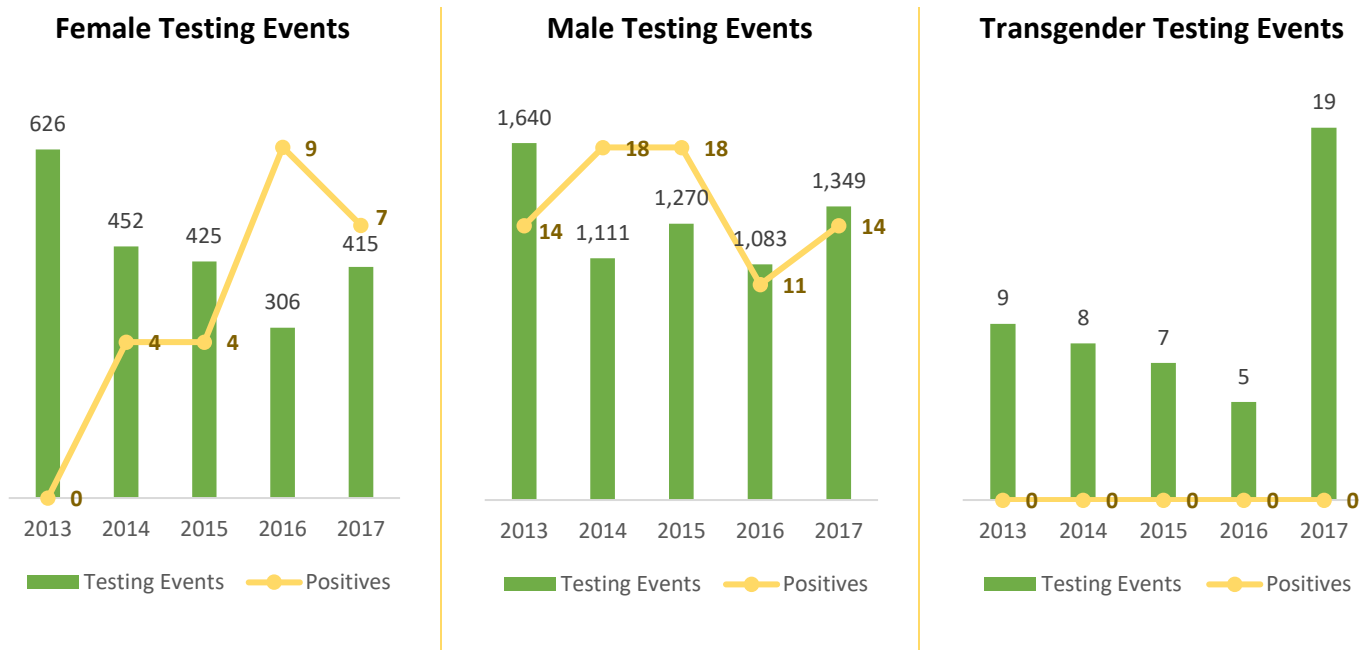
targeted testing efforts on CDC identified high-risk populations. In 2014, males have the larger volume of testing events at Non-Healthcare Settings (1,111) when compared to female testing events (452).

Figures 40 and 41 displays testing events trends, by gender, for the years 2013-2017 with an overlay of newly diagnosed HIV-positive events found in Healthcare Settings and Non-Healthcare Settings respectively.

**Figure 40: Healthcare Settings Total Testing Events and Newly Diagnosed Events (2013-2017)**



**Figure 41: Non-Healthcare Settings Total Testing Events and Newly Diagnosed Events (2013-2017)**



## Race / Ethnicity

Figure 42 displays all testing events and all initial HIV-diagnosed persons for the years 2013-2017. The figure shows that in the healthcare settings, there is a disproportionate amount of Black/African Americans who participated in testing events when compared to those that test positive. During 2013-2017, on average 20% of testing event participants in healthcare settings were Black/African American.

**Figure 42: Kansas Total HIV Incidence vs. Healthcare Setting Testing Events Compared to Newly Diagnosed Persons (2013-2017)**

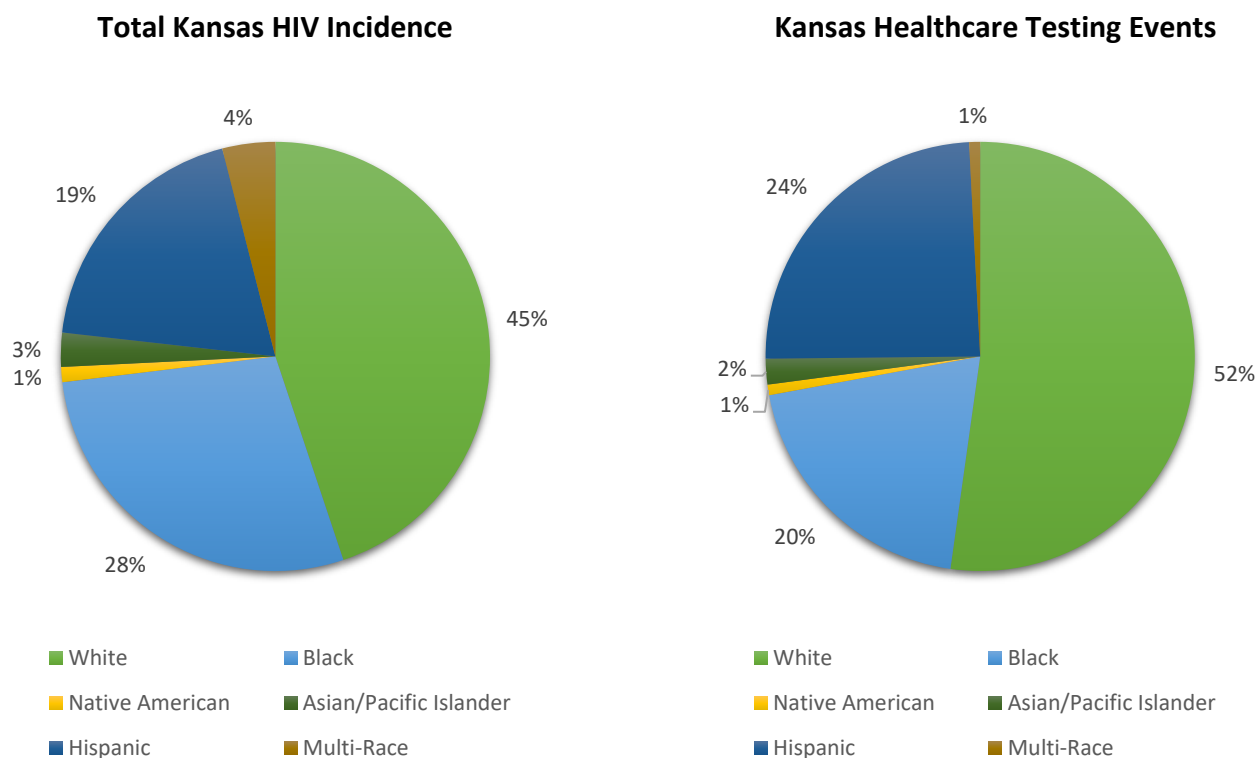
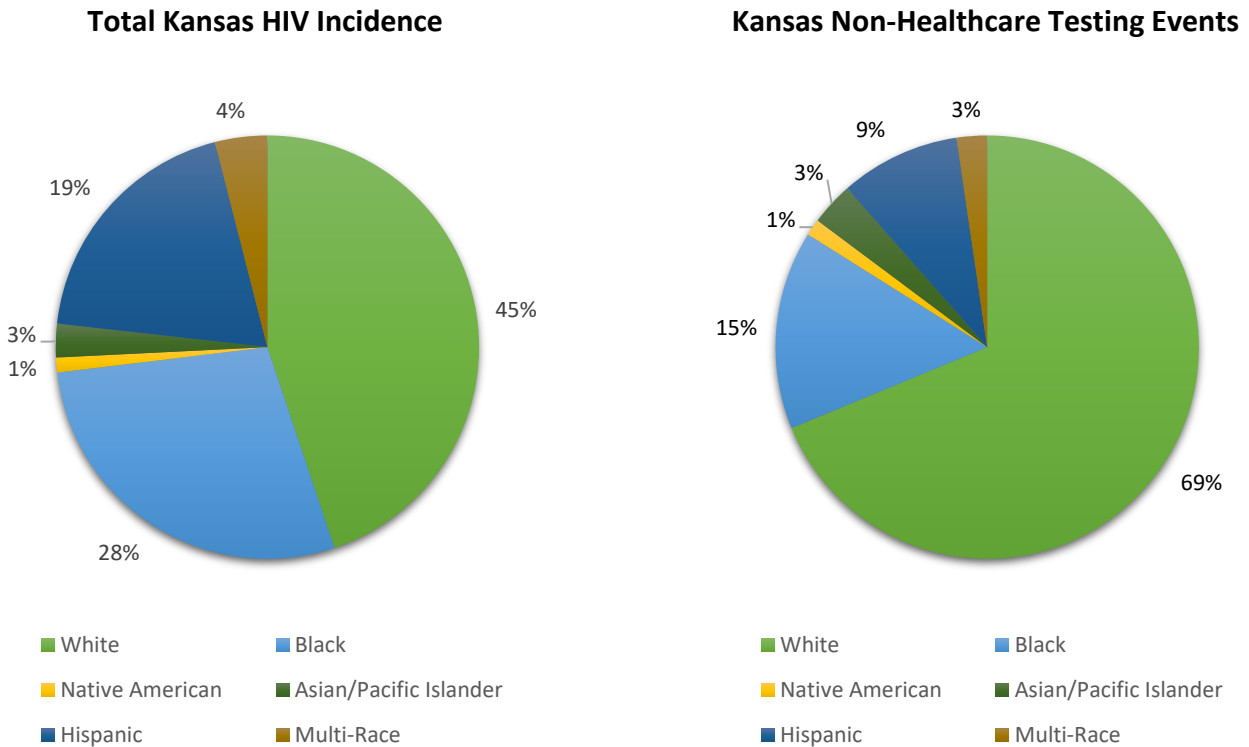


Figure 43 displays all testing events and all initial HIV-diagnosed persons for the years 2013-2017. The figure shows that in the non-healthcare settings, there is a disproportionate amount of Black/African Americans who participated in testing events when compared to those that test positive. During 2013-2017, on average 15% of testing event participants in non-healthcare settings were Black/African American.

**Figure 43: Kansas Total Incidence vs. Non-Healthcare Setting Testing Events Compared to Newly Diagnosed Persons (2013-2017)**

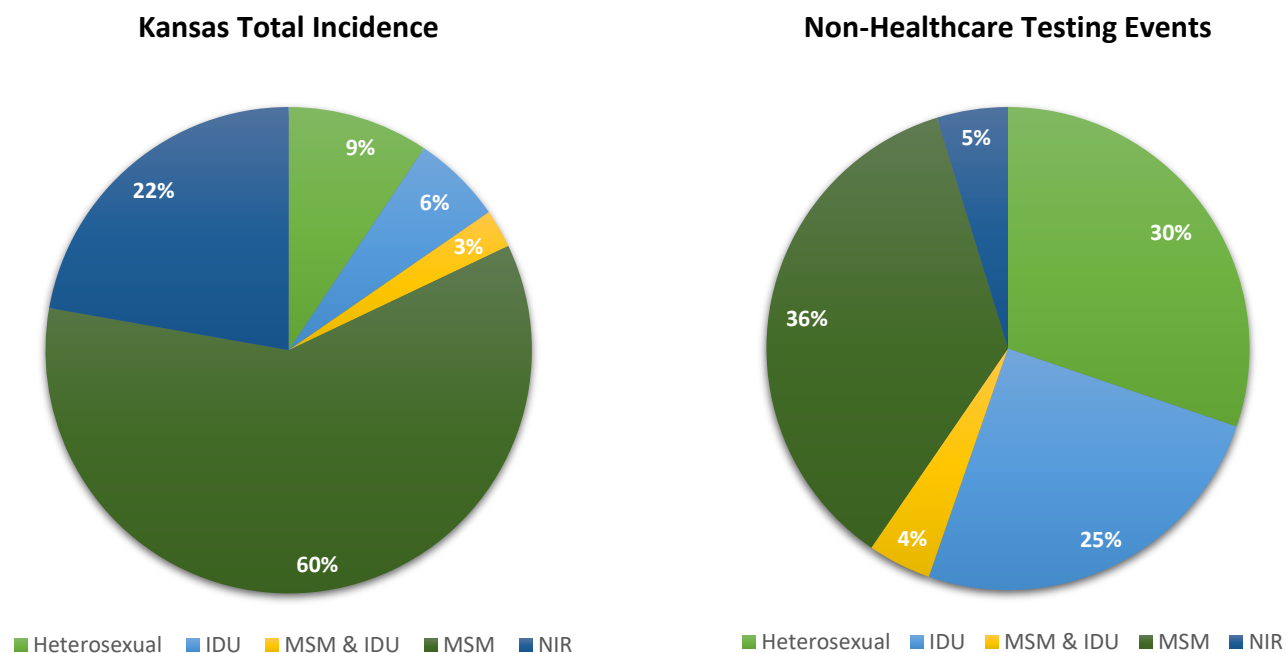


### **Mode of Transmission**

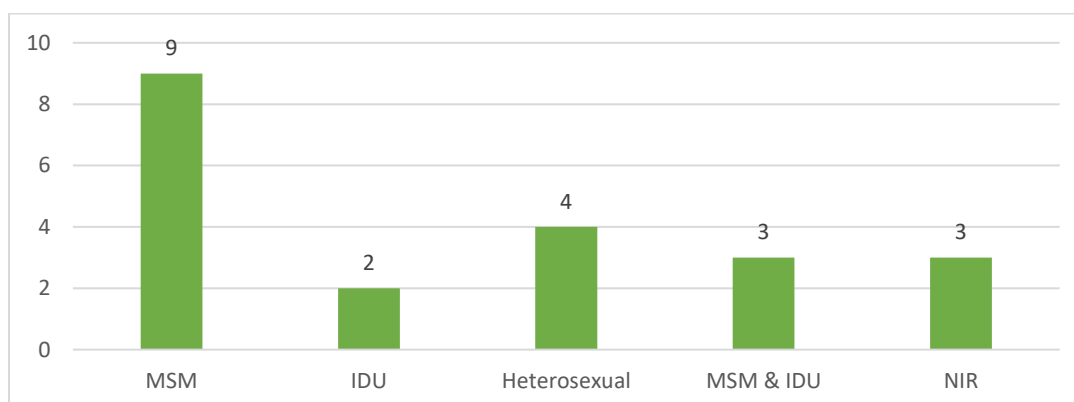
HIV prevention efforts are focused in communities and local areas where HIV is most heavily concentrated to achieve the greatest impact in decreasing the risks of acquiring HIV. Risk factor data is collected and reported to ensure that high-priority populations are being reached in non-clinical settings. Testing done in healthcare settings is part of routine testing as recommended by the CDC and therefore risk factor data is not reported.

In 2017, MSM was the highest mode of transmission category in non-healthcare setting sites. MSM transmission was reported for 36% of all the new cases found in non-healthcare settings in 2017. The second largest reported mode of transmission was high risk heterosexual behaviors. Figure 45 displays mode of transmission data for calendar year 2017 for new HIV diagnoses.

**Figure 44: Total Kansas HIV Incidence vs. Non-Healthcare Sites Testing Events by Mode of Transmission, 2017**



**Figure 45: Non-Healthcare Sites New HIV Diagnoses by Mode of Transmission, 2017**



## *HIV Continuum of Care*

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The HIV Care Continuum is a measure of HIV medical care with five variables, which includes viral suppression. When an HIV-positive person is virally suppressed they have a low risk to transmit the disease to other persons. In 2013, President Obama established the “HIV Care Continuum Initiative,” which encourages state HIV programs to prioritize areas the Care Continuum addresses.

The Care Continuum’s five sections are:

### **Diagnosed and Living in Kansas**

The HIV Care Continuum begins with a diagnosis of HIV infection. People who don’t know they are infected are not accessing the care and treatment they need to stay healthy. They can also unknowingly pass the virus on to others. Due to Kansas reporting laws, Surveillance was unable to collect enough CD4 test values for patients living in Kansas to estimate the number of undiagnosed HIV persons in Kansas. Therefore, this measure is left out of the chart. In 2014, it was estimated that 15% of people living with HIV in the United States are unaware of their status.

### **Linked to Care**

Once an individual is aware of their HIV-positive status, it is imperative that they are linked to an HIV healthcare provider. The HIV healthcare provider and medical case manager (MCM) will assist the individual with obtaining access to care and treatment. The first bar, “Linked to Care,” shows the amount of newly diagnosed patients that received a Viral Load and CD4 within one month of diagnosis.

### **Receipt of Care**

CD4 and Viral Load test data is used to estimate the number of individuals that had a “receipt of care.” Receipt of Care is the percentage of individuals that had at least one CD4 or Viral Load test result within the given year. Many patients that have a long history of viral suppression and compliance with medication will often only see their HIV medical provider once or twice a year.

### **Retained in Care**

CD4 and Viral Load test data is used to estimate the number of individuals that are “retained in care.” A person who is retained in care is someone that has both a CD4 and a Viral Load test performed twice a year at least three months apart. Due to Kansas HIV reporting laws, CD4 results above 500 cells/uL and undetectable Viral Loads were not required reporting until May 2018. For this reason, retained in care is left out of Figure 45. The first annual numbers for this measure will be available in the CY2018 report and the first five-year numbers will be available in the next Epi-Profile publication.

## Virally Suppressed

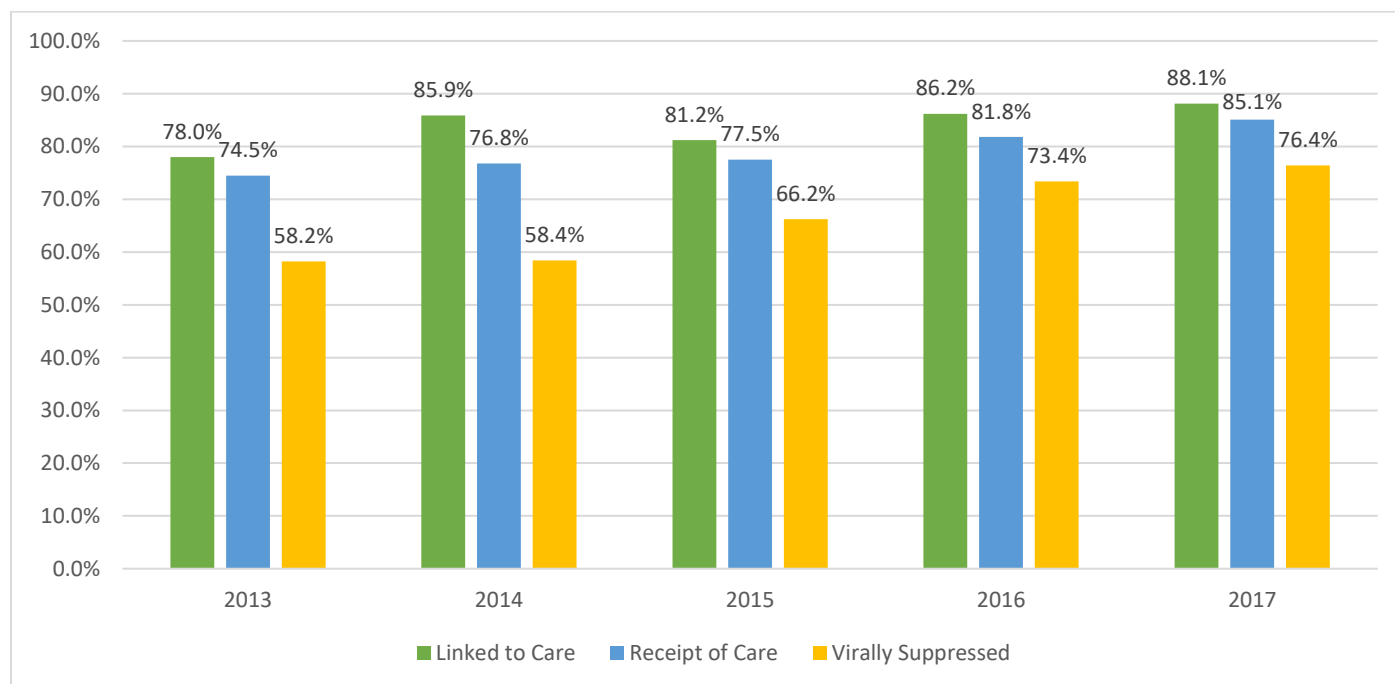
Anti-retroviral (ART) are medications that are used to keep the HIV infection to a manageable level. According to the CDC, with treatment HIV-positive persons can live longer, be healthier, and reduce their ability to sexually transmit HIV by 96%. The last bar, “Virally Suppressed,” shows the amount of people living in Kansas who are virally suppressed. As of December 2017, 76.4% of HIV-positive people living in Kansas were virally suppressed.

Figure 46 is the Kansas HIV Continuum of Care. Since 2013, Kansas has helped improve our ability to link newly diagnosed clients to care and help them receive assistance to ensure compliance with treatment and testing. In 2017, 88.1% of new positives were linked to care within one month of diagnosed, the highest total during the five-year period.

The numbers for Receipt of Care and Virally Suppressed are significantly lower in the years 2013 to 2015 in part due to staffing constraints that hindered the ability to conduct thorough data cleanup efforts. During the data cleanup initiatives in 2018, 786 patients were identified as not in care, which means these patients did not receive a Viral Load or CD4 test result for more than 12 months. 206 of these patients had moved out of Kansas before January 2017 and 170 were still residing in Kansas and receiving care. An additional 46 patients were found to be deceased or were not HIV positive. Therefore, with more than half of the not in care patients found, the 2016 and 2017 Receipt of Care and Virally Suppressed estimates are accurate interpretations for their respective years.

According to CDC, in 2015, 51% of all people living with HIV in the United States were virally suppressed and 63% had a receipt of care. Kansas exceeds both national average values in all five years.

**Figure 46: Kansas Continuum of Care (2013-2017)**



## *Part 3: HIV & STIs in Kansas*

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*Overall Trends for STIs in Kansas*

*STIs & HIV Co-Morbidity*

*HIV & TB Co-Morbidity*

## *HIV & STIs in Kansas Section Highlights*

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- Chlamydia is the most frequently reported STI in Kansas with 13,549 cases reported in 2017.
- Gonorrhea cases have increased 52% since 2013.
- Syphilis cases have increased 250% from 2013 to 2017.
- Overall individuals coinfecting with an STI and HIV, has risen from 2013-2017.
- During 2013-2017 a total of 200 persons were diagnosed with TB, 2% of these cases had co-morbidity with HIV.

## Sexually Transmitted Infections (STI) in Kansas

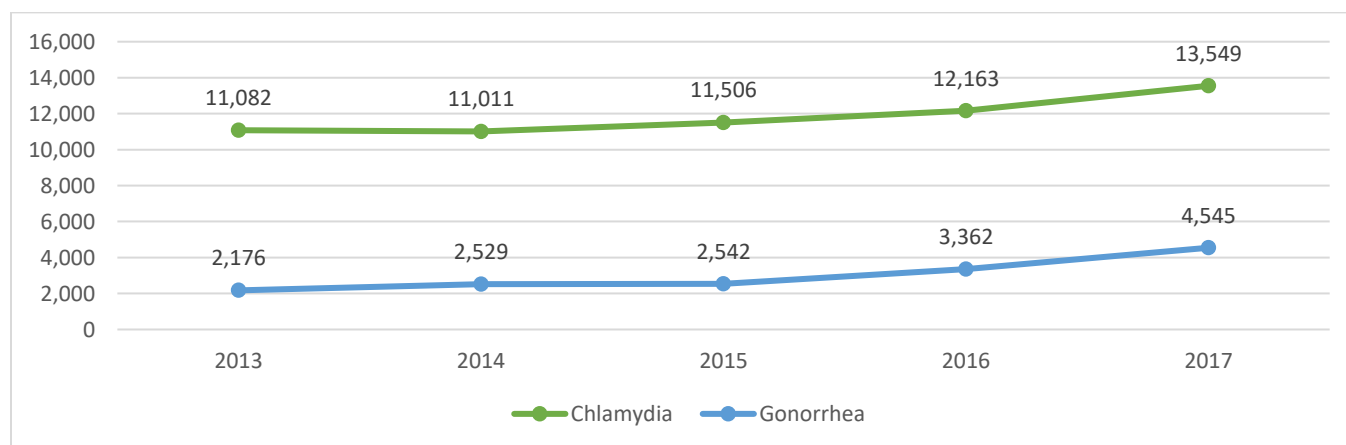
Sexually Transmitted Infections (STIs) are among the most frequently reported infectious diseases and constitute a significant health problem in Kansas. The three bacterial STIs reportable to KDHE are chlamydia, gonorrhea, and syphilis. As with HIV, certain limitations should be considered, including delayed reporting.

Women are more likely than men to be infected with an STI because the vagina's thin skin and moist environment makes it easier for bacteria to grow whereas the thicker skin on the penis makes acquiring an STI more difficult. Many studies show that uncircumcised men are also more likely to acquire an STI than circumcised men because the environment under the foreskin lacks oxygen and makes it more prone for bacteria to grow. In heterosexual relationships, the bacteria and viruses are more likely to pass from a man to a woman rather than woman to man. Women are also less likely to exhibit symptoms of STIs like gonorrhea and chlamydia than men or confuse their symptoms as a yeast infection.

Men are less likely than women to see their doctor and many men do not see a doctor until symptoms are present. Women are often tested for STIs as a routine part of pelvic exams and prenatal care. Women that acquire an STI can have serious health complications, especially on the reproductive system. If an STI is left untreated, it can lead to pelvic inflammatory disease, which may result in infertility. For women that are pregnant, transmission of an STI to their baby may result in stillbirth, low birth weight, brain damage, blindness, or deafness.

Since 2013, the number of reported gonorrhea cases in Kansas increased 52% and reported chlamydia cases increased 28% (Figure 47). According to CDC, the national rate of increase during this period was 67% for gonorrhea and 22% for chlamydia. Routine screening for chlamydia and gonorrhea on an annual basis is recommended by CDC for all sexually active females aged 25 years and younger. Men who have sex with men (MSM) are recommended to request STI/HIV testing at least once a year and men with multiple MSM partners may benefit with more frequent testing (every 3 to 6 months).

**Figure 47: Newly Reported Chlamydia & Gonorrhea Among Kansas Residents (2013-2017)**



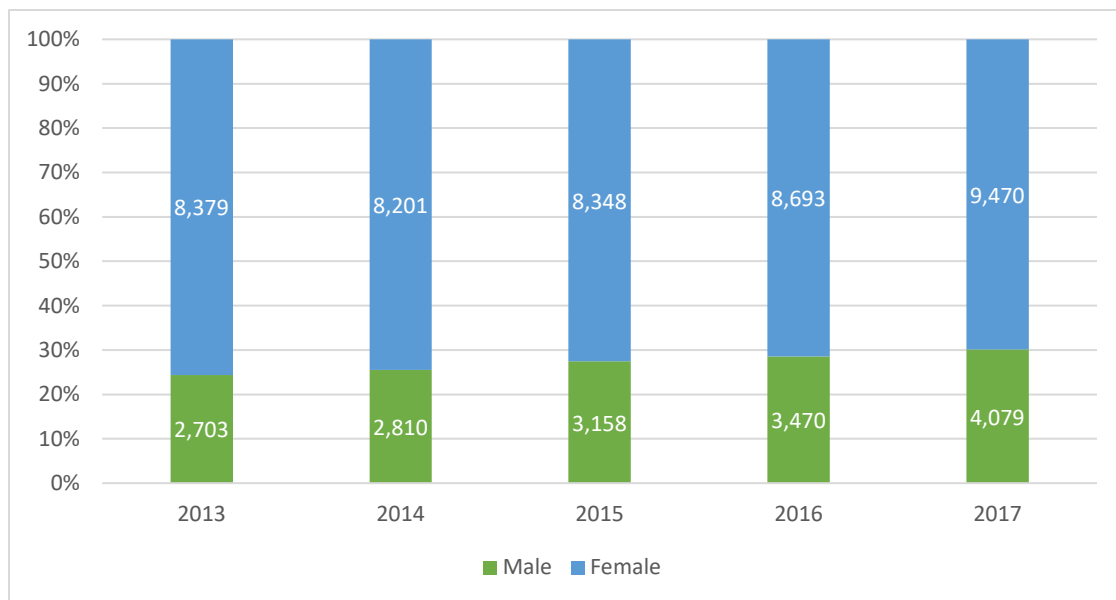
## Chlamydia

Chlamydia is a common STI that hits young women the hardest and increases the risk of contracting human papilloma virus (HPV). Chlamydia is easily cured, most often with 1g of Azithromycin as recommended by the CDC. Transmission of chlamydia usually occurs through heterosexual contact. For a detailed list of recommended treatment and scenarios, please see the Appendix.

### Gender

Although chlamydia infections disproportionately affect women, both men and women can contract chlamydia by having vaginal, anal, and/or oral sex with an infected individual. Regardless of previous treatment, individuals can be re-infected. As of 2017, there were 13,549 cases of reported chlamydia. As previously stated, females account for the majority of chlamydial infections. In 2017, approximately 70% of chlamydia cases were female. Figure 48 displays the total number of reported chlamydia cases.

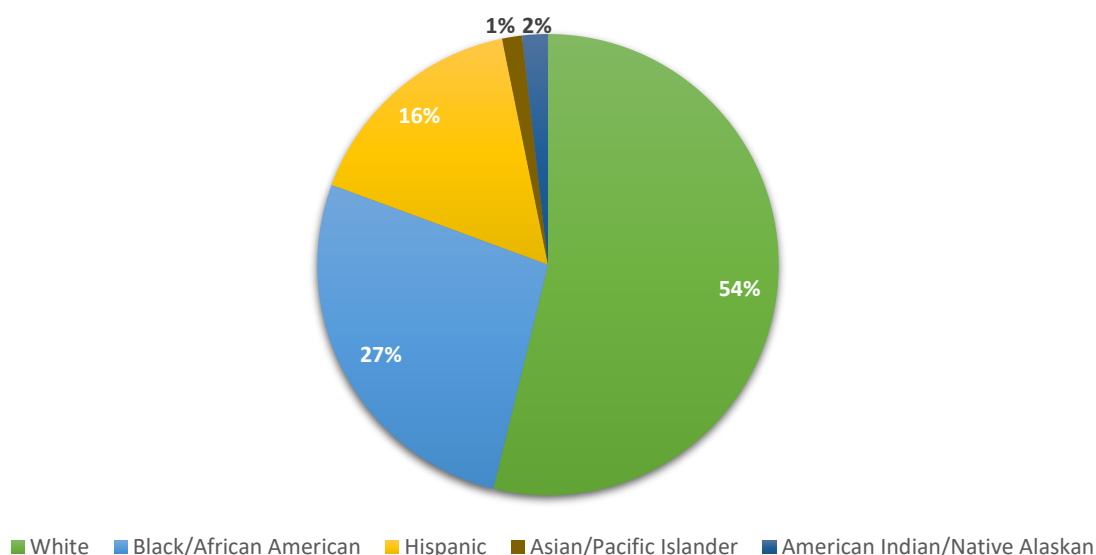
**Figure 48: Chlamydia Cases in Kansas by Sex at Birth (2013-2017)**



### **Race / Ethnicity**

Figure 49 displays the reported cases of chlamydia by race/ethnicity. The group with the largest representation is the White population, which holds a larger share of chlamydia diagnoses in 2017 than 2013. Reasons behind this remain unclear. There is a significant amount of cases that were reported with an unknown race and it is possible that minority patients were less likely to volunteer racial demographic information.

**Figure 49: Chlamydia by Known Race/Ethnicity (2013-2017)**



## Age

Chlamydia is considered a “young person’s disease”, often affecting teenagers and young adults. Table 21 shows that this trend is observed in Kansas as well. The majority of reported chlamydia cases are found in persons age 20-24, followed by persons age 15-19. Since 2013, reported chlamydia cases have increased in all age groups except 0-9 and 10-14.

**Table 21: Chlamydia by Age Group (2013-2017)**

|                 | 2013  | 2014  | 2015  | 2016  | 2017  | Average |
|-----------------|-------|-------|-------|-------|-------|---------|
| <b>0 to 9</b>   | 6     | 8     | 5     | 7     | 4     | 6.0     |
| <b>10 to 14</b> | 80    | 59    | 57    | 73    | 47    | 63.2    |
| <b>15 to 19</b> | 3,219 | 3,122 | 3,286 | 3,544 | 3,867 | 3,407.6 |
| <b>20 to 24</b> | 4,634 | 4,467 | 4,720 | 4,882 | 5,342 | 4,809.0 |
| <b>25 to 29</b> | 1,801 | 1,906 | 1,939 | 2,001 | 2,346 | 1,998.6 |
| <b>30 to 34</b> | 775   | 812   | 805   | 875   | 961   | 845.6   |
| <b>35 to 39</b> | 285   | 359   | 386   | 436   | 506   | 394.4   |
| <b>40+</b>      | 282   | 278   | 308   | 345   | 476   | 337.8   |

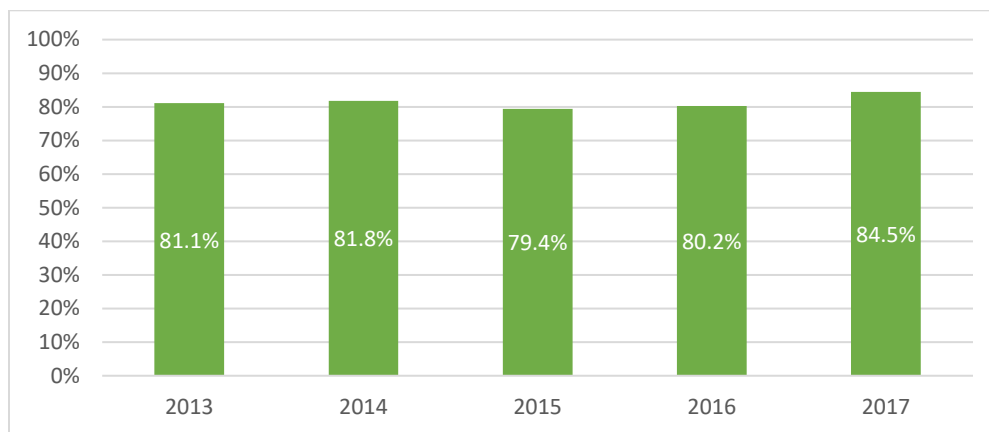
## Gonorrhea

Gonorrhea is an STI that can cause serious complications if left untreated, but can be cured if an infected individual is given the correct treatment regimen. Most infections in men produce easily noticeable symptoms, but often not soon enough to prevent infecting other partners. Most women do not produce recognizable symptoms until later in the infection, resulting in more serious complications. Routine screening for gonorrhea on an annual basis is recommended by the CDC for all sexually active females ages 25 and younger.

In 2011, the CDC released a publication in the Morbidity and Mortality Weekly Report (MMWR) regarding antibiotic resistant strains of gonorrhea. In this, the CDC stresses the importance for strict adherence to the new treatment guidelines. Certain strains of gonorrhea have become resistant to all but one drug classification, therefore it is required that infected individuals are treated with both a cephalosporin and azithromycin or doxycycline. If gonorrhea develops a resistance to this treatment protocol, the new strain could become easily transmittable and would be extremely difficult to treat, likely resulting in hospitalization of the infected persons to rid them of the infection.

Figure 50 represents the percentage of individuals who were diagnosed with gonorrhea and received proper treatment. Since 2015, the rate of correct treatment has increased with 84.5% of individuals properly treated in 2017.

**Figure 50: Percentage of Kansans Diagnosed with Gonorrhea that Received Proper Treatment (2013-2017)**



One common issue with gonorrhea is the risk of re-infection. As previously described, men and women often do not present symptoms early on. This, combined with unsafe sexual practices, may result in re-infection for individuals who were previously treated. Since 2013, re-infection rates have risen, from 13.1% in 2013 up to 16.3% in 2017. Susceptibility to azithromycin and cephalosporins such as ceftriaxone are being monitored nationally. According to the 2017 Sexually Transmitted Disease Surveillance Report from CDC, resistance to azithromycin was demonstrated in 4% of diagnosed gonorrhea cases while resistance to cephalosporins such as ceftriaxone remained less than 0.3%.

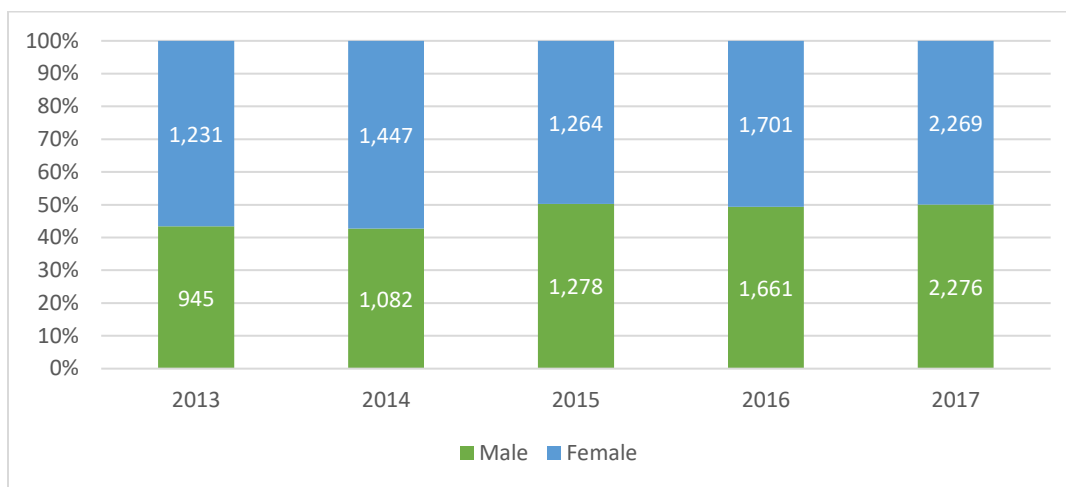
**Table 22: Kansans Re-Infected with Gonorrhea (2013-2017)**

|             | Total Gonorrhea Cases | Number of Re-Infections | Percentage of Re-Infection |
|-------------|-----------------------|-------------------------|----------------------------|
| <b>2013</b> | 2,176                 | 285                     | 13.1%                      |
| <b>2014</b> | 2,529                 | 386                     | 15.3%                      |
| <b>2015</b> | 2,542                 | 372                     | 14.6%                      |
| <b>2016</b> | 3,362                 | 480                     | 14.3%                      |
| <b>2017</b> | 4,545                 | 742                     | 16.3%                      |

## Gender

As with other STIs, gonorrhea can infect both men and women by having vaginal, anal, and/or oral sex with an infected individual. Prior treatment does not protect a person from re-infection. In 2017, there were 4,545 reported cases of gonococcal infections, with only a slight difference between males and females where each group accounted for 50.1% and 49.9% of total cases, respectively. Figure 51 reflects the rate of infection among men and women from 2013-2017, which shows that females were more likely to be diagnosed with Gonorrhea between 2013 and 2014, but from 2015 to 2017, the numbers were closer to 50/50.

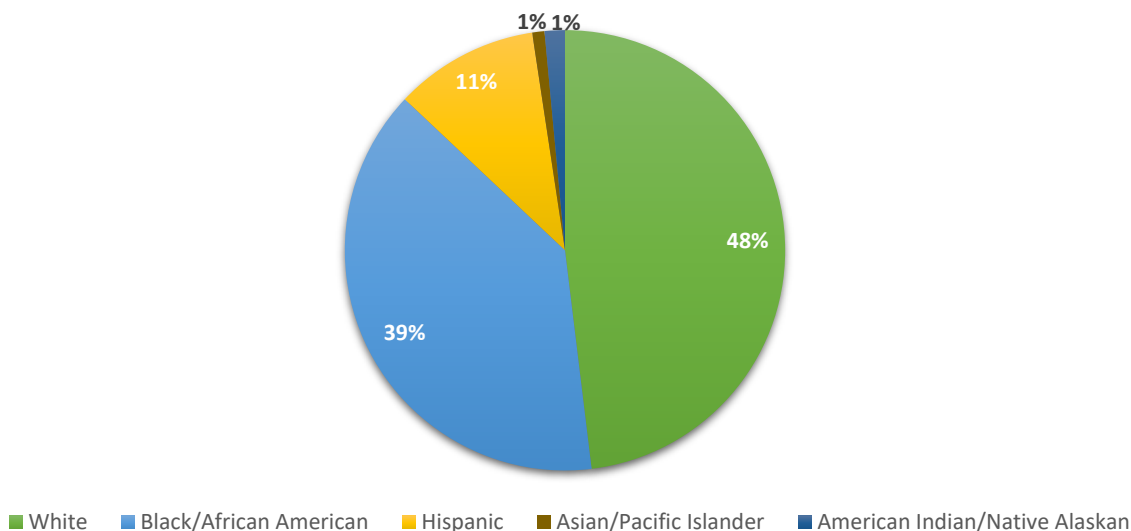
**Figure 51: Gonorrhea by Gender (2013-2017)**



## Race / Ethnicity

Figure 52 displays the percentages of reported gonorrhea cases for 2013-2017 by race/ethnicity. White, non-Hispanic persons account for the largest proportion of reported cases, followed by Black/African American persons. 48% of all cases between 2013 and 2017 were among the White population.

**Figure 52: Gonorrhea by Race/Ethnicity (2013-2017)**



## Age

Gonorrhea, much like chlamydia, affects younger age groups the most, with the largest number of reported cases falling between the age range of 20-24 (Table 23). Unlike chlamydia, gonorrhea is increasing among people older than 40 years of age. Individuals between 25-29 and 30-34 years of age are steadily increasing, with 923 and 581 reported cases in 2017, respectively.

**Table 23: Gonorrhea by Age Group (2013-2017)**

|                 | 2013 | 2014 | 2015 | 2016 | 2017  | Average |
|-----------------|------|------|------|------|-------|---------|
| <b>0 to 9</b>   | 1    | 0    | 1    | 5    | 7     | 2.8     |
| <b>10 to 14</b> | 7    | 10   | 8    | 21   | 9     | 11.0    |
| <b>15 to 19</b> | 422  | 487  | 430  | 586  | 873   | 559.6   |
| <b>20 to 24</b> | 757  | 855  | 832  | 972  | 1,341 | 951.4   |
| <b>25 to 29</b> | 457  | 573  | 520  | 775  | 923   | 649.6   |
| <b>30 to 34</b> | 258  | 306  | 336  | 427  | 581   | 381.6   |
| <b>35 to 39</b> | 117  | 163  | 175  | 275  | 375   | 221.0   |
| <b>40+</b>      | 157  | 135  | 240  | 301  | 436   | 253.8   |

## **Syphilis**

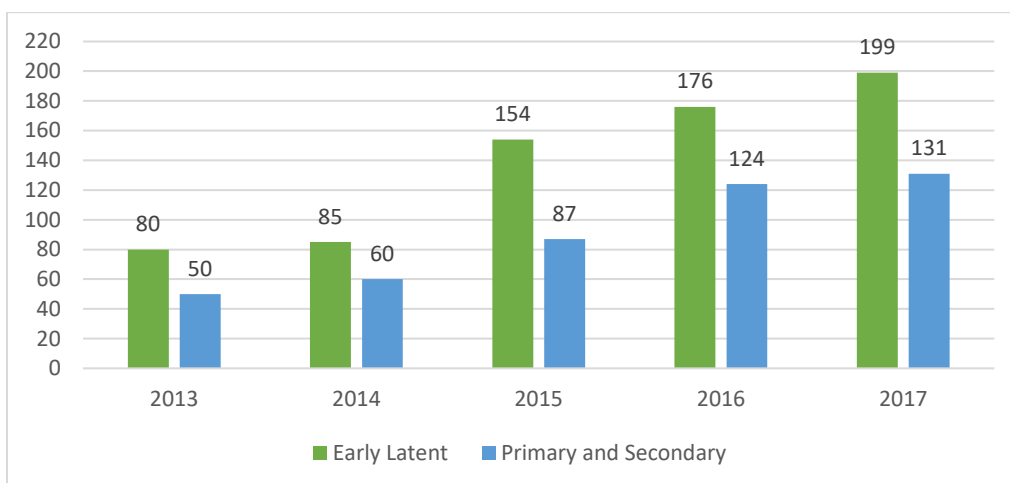
Syphilis, unlike other STIs, is not spread by way of bodily fluid. Instead, syphilis is contracted by encountering a syphilitic sore, which contain large amounts of the pathogen. These sores initially start out as a painless chancre upon the site of infection. This chancre can be mistaken for many different things, such as an ingrown hair, cold sore, etc. These chancres are often found on the penis, vagina, anus, in the rectum, on the lips, or around the mouth. This can be problematic, as with women it is often more difficult to spot this chancre early during infection. Due to these difficulties, syphilis is often diagnosed later in the infection cycle. Left untreated, syphilis can cause long-term complications, including neurological problems, and in some cases, even death.

Often, an infected individual will seek treatment for the different symptoms presented by the disease throughout its cycle. During primary infection, the individual will present a painless chancre upon site of infection. The person at this point will not necessarily experience any negative effects from the pathogen; however, they will be contagious at this point.

During secondary infection, the individual will present a systemic rash, often manifesting on the extremities. In addition to this, the pathogen will invade the mucous membranes of the tongue, causing swells to form within the mucous patches, as well as conjunctivitis of the eyes. After this, the infected person will enter latent stage. At this point they are asymptomatic and relatively non-infectious. However, the pathogen is now entering other parts of the body, such as the heart, skeletal muscles, and central nervous system. If left entirely untreated, the individual may go years or even decades before presenting symptoms again. If the infected person reaches tertiary infection, they will experience inflammation throughout the body. This will present itself as rubbery tumors “gumma”, on the skin, brain, bones, etc. This is extremely problematic, as the inflammation can occur in the cardiovascular system, putting strain on the aorta and other major arteries, or within the nervous system, causing meningitis, encephalitis, dementia, or paralysis.

Figure 53 displays the trend analysis for primary, secondary, and early latent stage syphilis infections reported. Since 2013, reported cases for syphilis has been on the rise, with 330 reported cases in 2017 as compared to 130 in 2013.

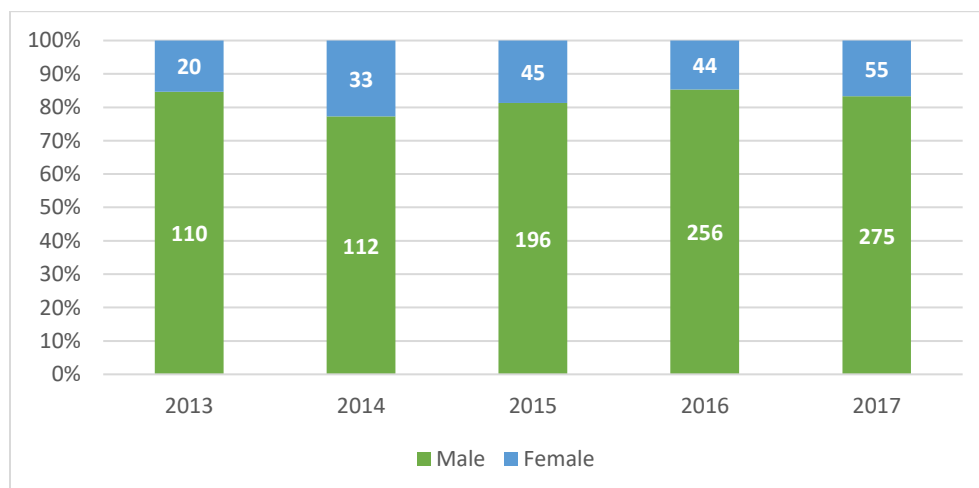
**Figure 53: Primary, Secondary, and Early Latent Syphilis Cases (2013-2017)**



## Gender

Similar to gonorrhea and chlamydia, syphilis can infect and re-infect both men and women, regardless of prior treatment. Unlike chlamydia and gonorrhea, men on average tend to have higher rates of syphilis infection when compared to women. Men who have sex with men (MSM) tend to have the highest rates, due to riskier sexual activities and behaviors. In 2017, males accounted for 83% of all syphilis cases, which is slightly higher than the proportion of males and females living with HIV in Kansas. Figure 54 represents all reported cases for the state of Kansas from 2013-2017.

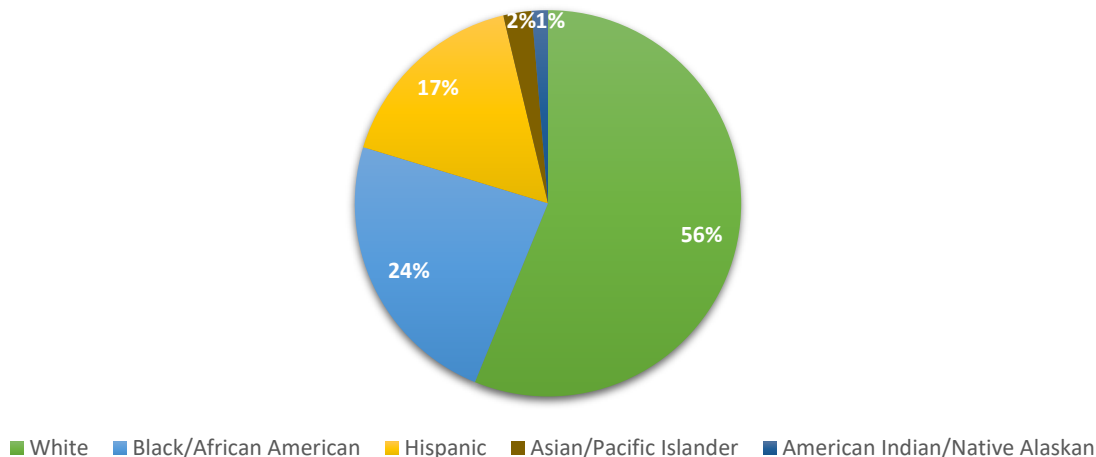
**Figure 54: Early Syphilis by Gender (2013-2017)**



## Race / Ethnicity

Syphilis is predominately seen in the White, non-Hispanic demographic as seen in Figure 55. On average, 56% of the reported cases were among White individuals.

**Figure 55: Early Syphilis by Race/Ethnicity (2013-2017)**



## Age

Age groups 0-9 years and 10-14 years of age during the period of 2013-2017 had zero cases reported. This is significant to note, because during the period of 2013-2017 there were no congenital syphilis cases and shows that the Partner Services (PS) program is doing exceptionally well at their jobs.

As indicated by Table 24, people 20-24 years of age are the most likely to be infected. This age group contains women of child-bearing age and shows how the PS program works to ensure that women who are pregnant or may become pregnant are treated and do not pass the disease onto their children.

The age group 40+ years shows an increase in all years except for 2016 to 2017. Currently, it is unclear whether a decline among this age group is likely. However, syphilis diagnoses have increased since 2013 among all age groups except for people age 0 to 14 in which there were no cases.

**Table 24: Early Syphilis by Age Group (2013-2017)**

|                 | 2013 | 2014 | 2015 | 2016 | 2017 | Average |
|-----------------|------|------|------|------|------|---------|
| <b>0 to 9</b>   | 0    | 0    | 0    | 0    | 0    | 0       |
| <b>10 to 14</b> | 0    | 0    | 0    | 0    | 0    | 0       |
| <b>15 to 19</b> | 8    | 12   | 21   | 20   | 16   | 15.4    |
| <b>20 to 24</b> | 30   | 30   | 63   | 66   | 69   | 51.6    |
| <b>25 to 29</b> | 28   | 23   | 42   | 58   | 76   | 45.4    |
| <b>30 to 34</b> | 18   | 17   | 31   | 40   | 58   | 32.8    |
| <b>35 to 39</b> | 12   | 11   | 24   | 29   | 35   | 22.2    |
| <b>40+</b>      | 34   | 52   | 60   | 87   | 76   | 61.8    |

## STI and HIV Co-Morbidity in Kansas

STI comorbidity, especially syphilis, continues to rise for HIV-positive individuals. A study conducted by Refugio and Klausner (2018) found that MSM persons are disproportionately affected by syphilis and HIV. This is likely because syphilis infections cause open sores, as well as recruit CD4 T-cells to the site of infection. This puts the infected individual at risk for a subsequent HIV infection, as the virus now has a portal of entry into the body, as well as allowing access to the CD4 cells it infects. It can also be argued that an HIV infection makes the individual more susceptible to other STI infections, as HIV causes an ongoing deterioration of the immune system, leaving the individual more susceptible to co-morbidity infections.

Figure 56 shows the number of reported cases for individuals co-infected with an STI and HIV for 2013-2017. Overall, co-infection rates have risen, with the largest increases seen with syphilis and gonorrhea. The first part of this section will show overall numbers of co-morbidity and the second will show a side-by-side comparison of prevalent co-infection and dual infection at incidence for each STI. Dual infection is a newly diagnosed HIV-positive person simultaneously diagnosed with an STI.

**Figure 56: HIV-Positive Kansans Co-Infected with an STI (2013-2017)**

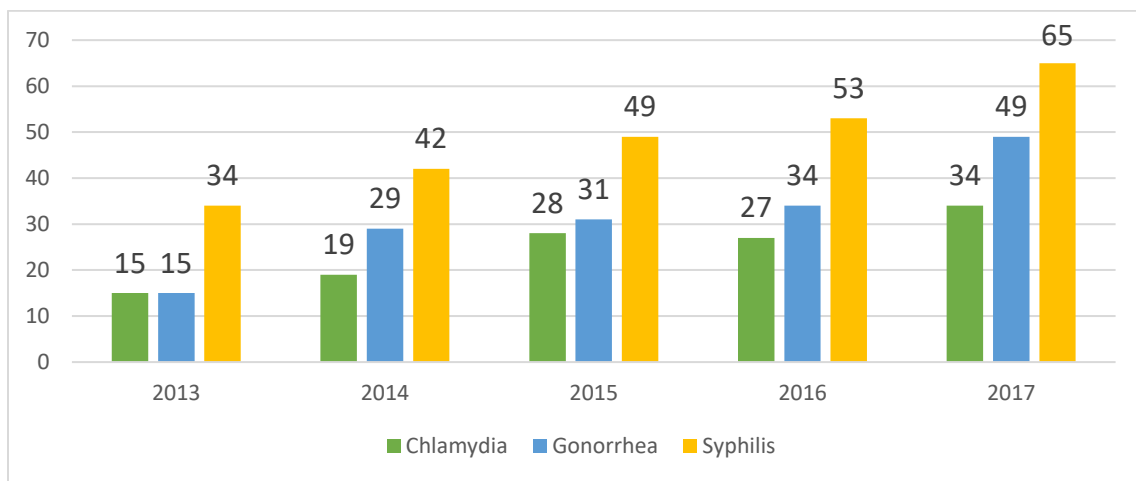


Figure 57 represents the percentage of individuals who experienced a co-infection of HIV and another STI based upon gender. Predominantly, males are most affected by co-infection, making up 92% of all reported cases from 2013-2017, which is significantly higher than the statewide STI averages. The majority of females in the graph below were co-infected with HIV and chlamydia.

With such high rates of co-morbidity among the male population, HIV-positive men seeking testing for syphilis and gonorrhea more frequently may provide benefits and reduce the risk of co-infection. Syphilis negatively effects HIV infection, resulting in higher Viral Loads and lower CD4 counts during the syphilis infection. Co-infection between syphilis and HIV is also linked to higher risks of neurological complications and treatment failure (Salado-Rasmussen, 2015).

**Figure 57: HIV-Positive Kansans Co-Infected with an STI by Gender (2013-2017)**

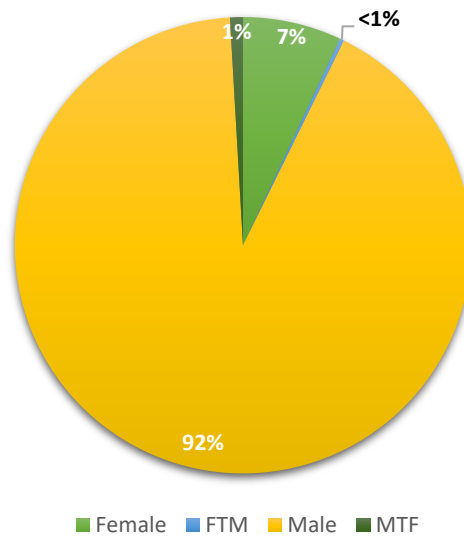


Figure 58 describes the percentages of individuals co-infected with an STI and HIV by race/ethnicity. Overall, White, non-Hispanic individuals are most affected, followed closely by Black/African American individuals. The Black/African American population are disproportionately affected by co-infection when compared to the demographics of the overall population.

**Figure 58: HIV-Positive Kansans Co-Infected with an STI by Race/Ethnicity (2013-2017)**

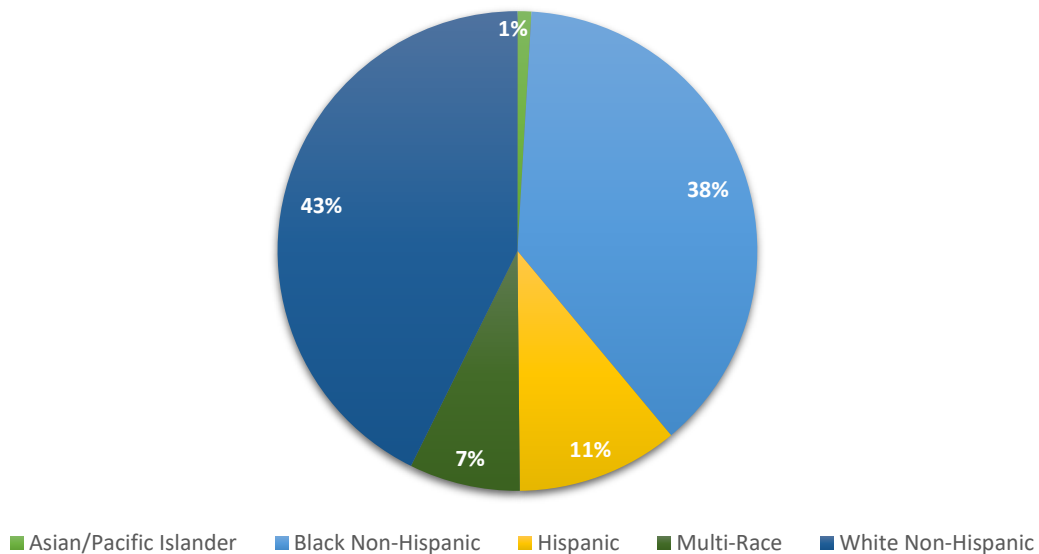
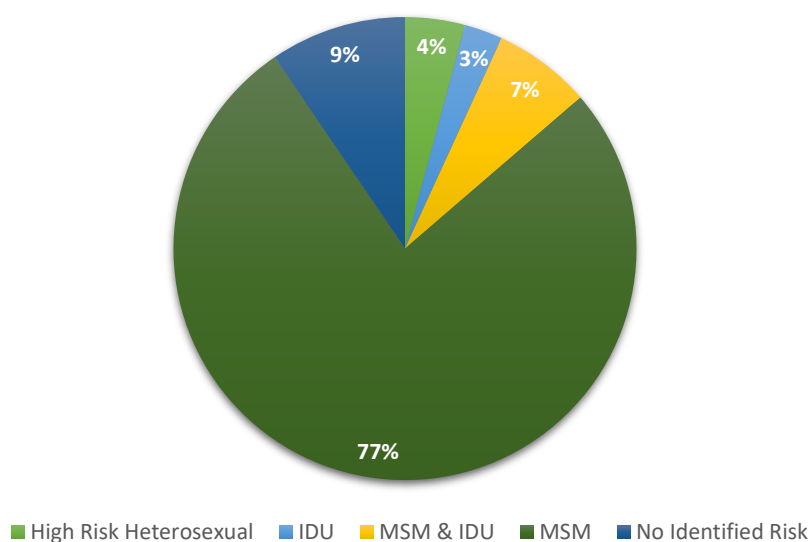


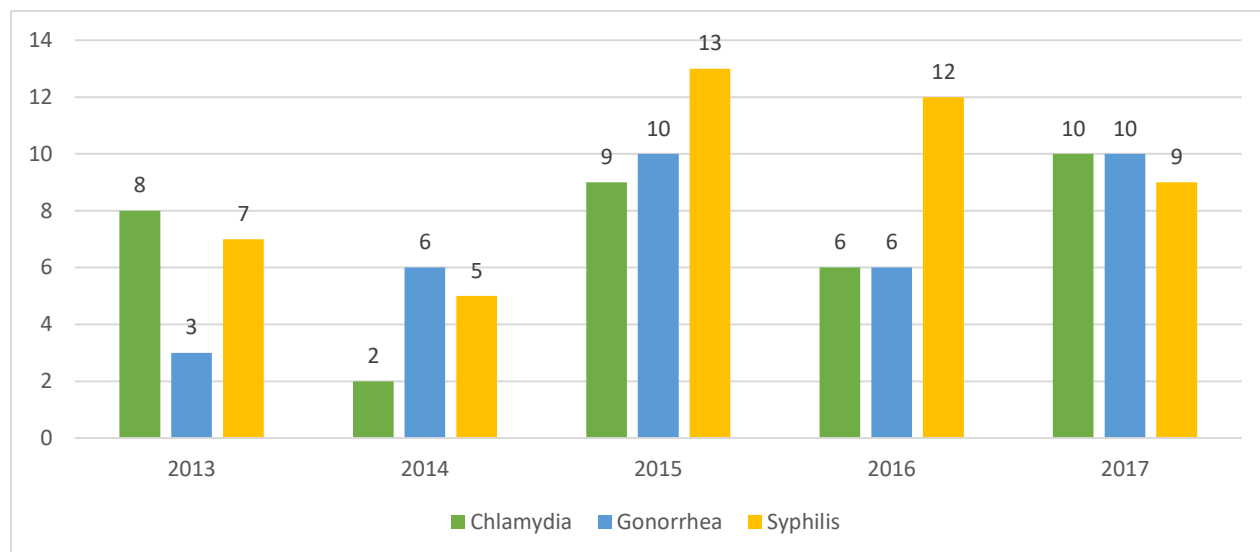
Figure 59 represents the percentages of individuals co-infected with HIV and another STI based on transmission, or risk factors. The most common risk factor, at 77%, is men who have sex with men (MSM). 10% of co-infection cases are among people who inject drugs.

**Figure 59: HIV-Positive Kansans Co-Infected with an STI by Transmission Category (2013-2017)**



In 2017, nearly one out of four newly diagnosed HIV-positive patients were also diagnosed with an STI. While Figure 60 shows a decline in syphilis co-infection with HIV, it is important to remember that 2017 also saw fewer HIV diagnoses than the preceding years.

**Figure 60: HIV Dual Diagnosis with an STI (2013-2017)**

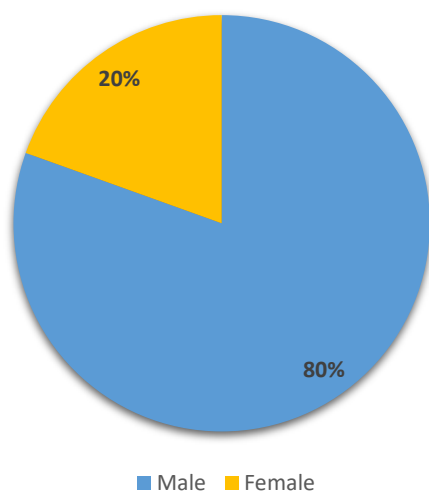


### **HIV and Chlamydia**

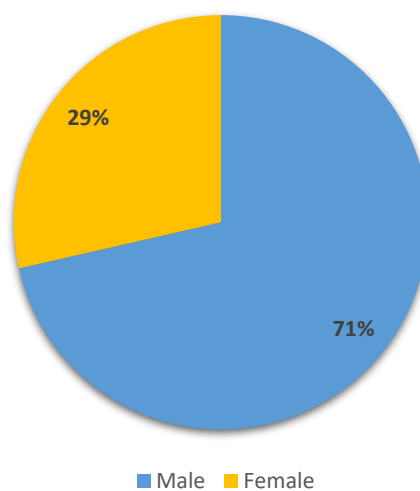
During 2013-2017, males had a higher percentage of dual diagnosis of HIV and chlamydia. This is likely due to how HIV disproportionately affects MSM individuals. For females, a dual diagnosis or co-infection of HIV and chlamydia was more common than co-infection with syphilis or gonorrhea.

**Figure 61: HIV and Chlamydia Co-Morbidity by Sex at Birth (2013-2017)**

**Prevalent HIV w/Chlamydia Diagnosis**



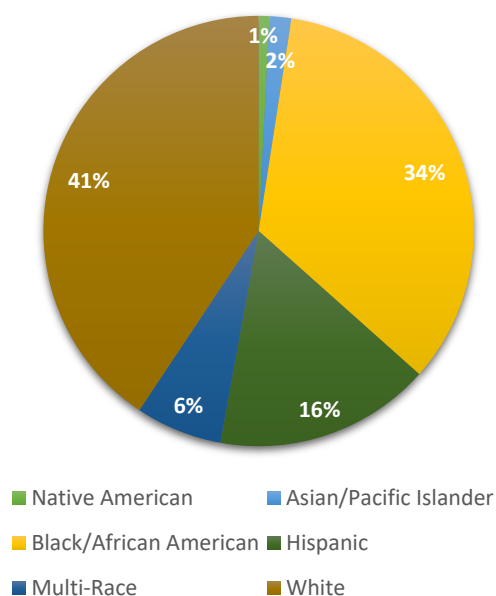
**HIV & Chlamydia Dual Diagnosis**



For people newly diagnosed HIV-positive individuals between 2013 and 2017, the White demographic was most likely to be co-infected with chlamydia (Figure 62). The same is true among the prevalent HIV population that were newly diagnosed with chlamydia. The dual diagnosis of HIV and chlamydia was less common among the Black/African American population than co-infection among the prevalent population.

**Figure 62: HIV and Chlamydia Co-Morbidity by Race/Ethnicity (2013-2017)**

**Prevalent HIV w/ Chlamydia Diagnosis**



**HIV & Chlamydia Dual Diagnosis**

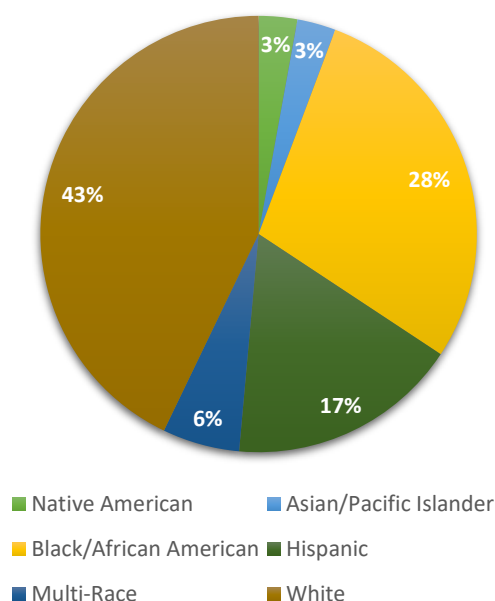
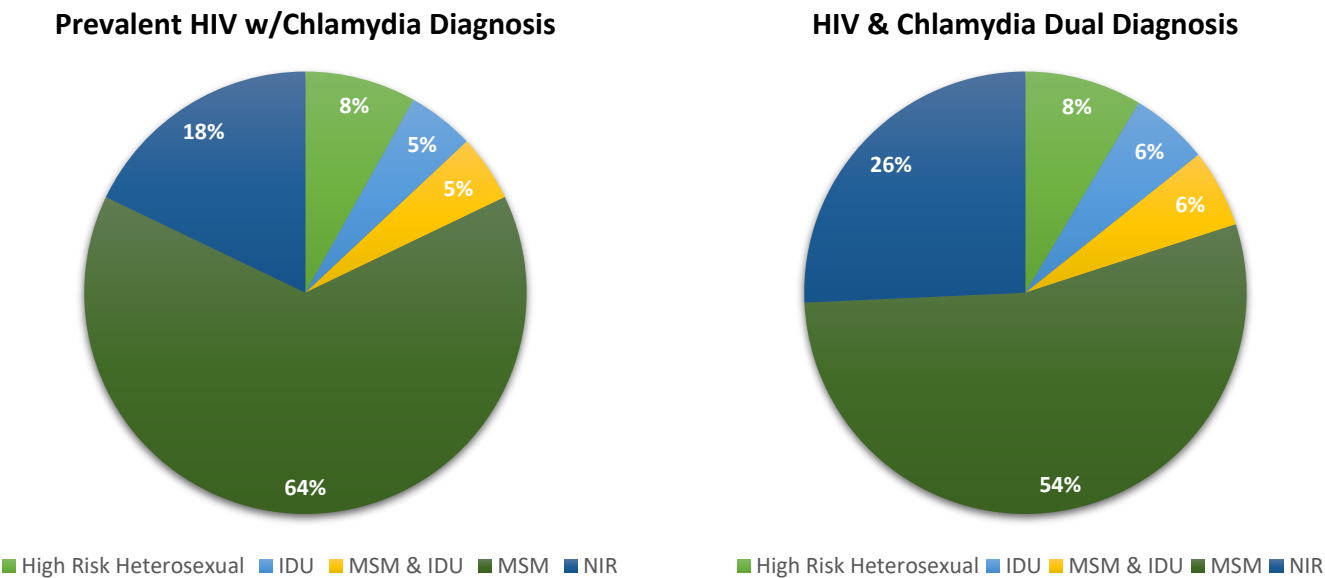


Figure 63 shows that MSM was the most common risk factor associated with HIV and comorbidity chlamydial infection for 2013-2017. The high-risk heterosexual population living with HIV were more likely to contract a chlamydia co-infection than a co-infection with other STIs. The same is true among the IDU population.

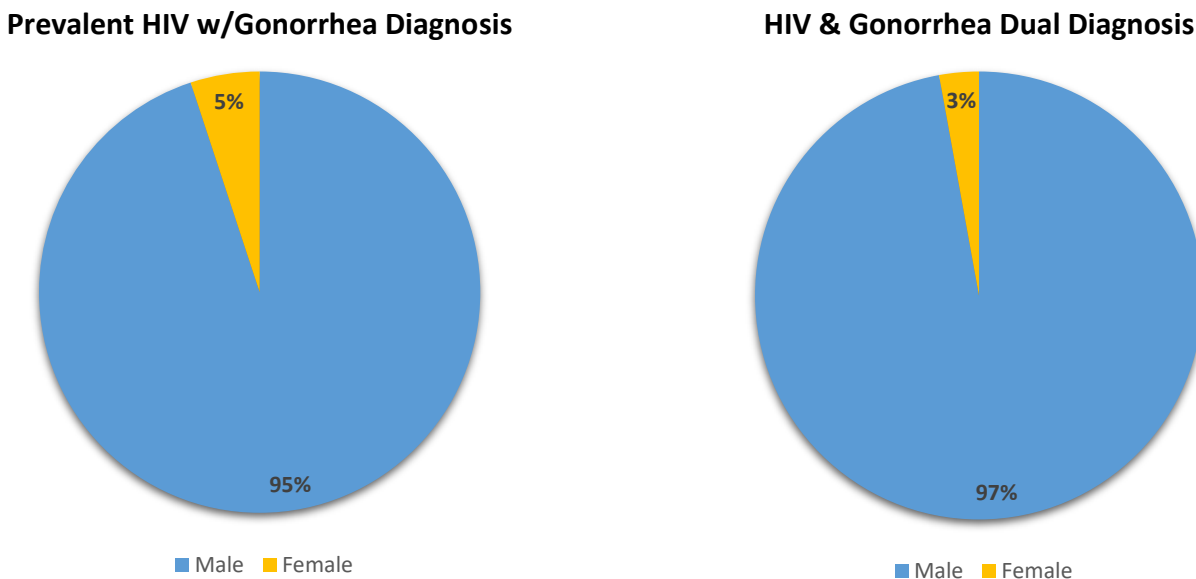
**Figure 63: HIV and Chlamydia Co-Morbidity by Transmission Category (2013-2017)**



## HIV and Gonorrhea

As shown in Figure 64, men are disproportionately affected by HIV and gonorrhea comorbidity. This is likely due to MSM individuals being at greater risk of contracting HIV and subsequent infections.

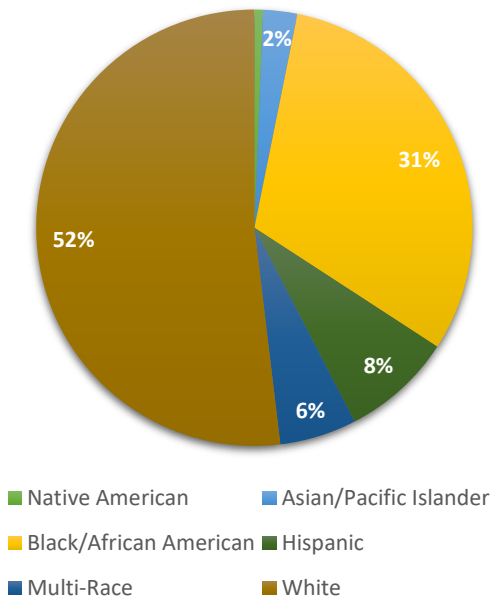
**Figure 64: HIV and Gonorrhea Co-Morbidity by Sex at Birth (2013-2017)**



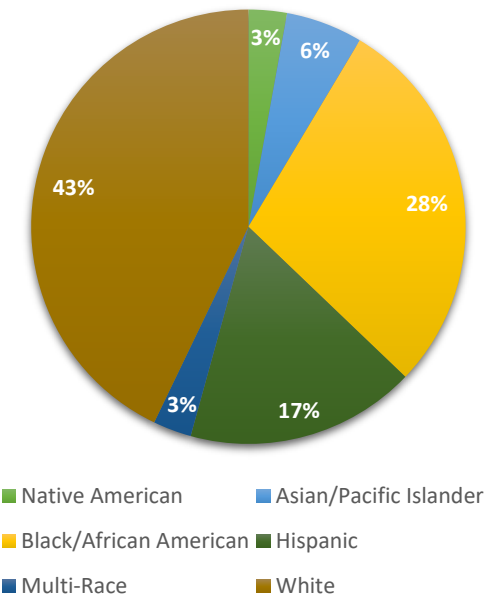
As shown by Figure 65, White, non-Hispanic individuals make up a majority of HIV and gonorrhea co-infections and dual diagnoses. More than half of all co-infection cases of HIV and gonorrhea was among the White population.

Figure 65: HIV and Gonorrhea Co-Morbidity by Race/Ethnicity (2013-2017)

Prevalent HIV w/Gonorrhea Diagnosis



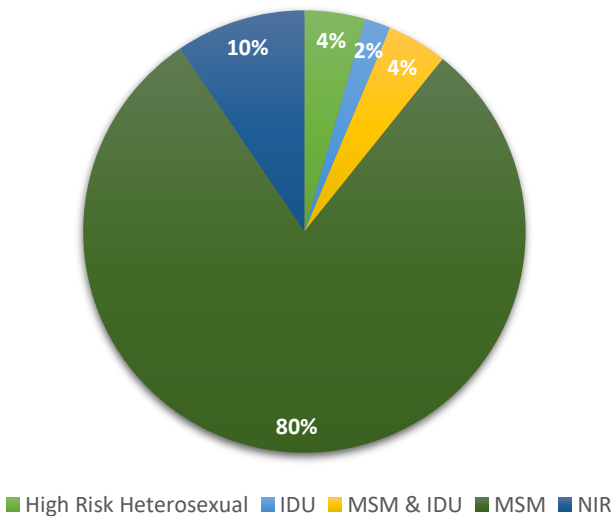
HIV & Gonorrhea Dual Diagnosis



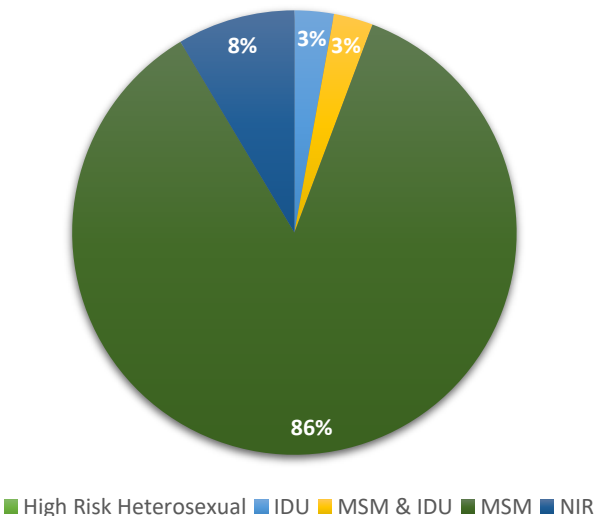
Results in Figure 66 indicate that MSM is the leading risk factor associated with HIV and gonorrhea dual diagnosis and co-infection for 2013-2017. HIV co-infections with gonorrhea have the highest percentage among MSM populations and the lowest percentage among No Identified Risk (NIR).

Figure 66: HIV Dual Diagnosis with Gonorrhea by Transmission Category (2013-2017)

Prevalent HIV w/Gonorrhea Diagnosis



HIV & Gonorrhea Dual Diagnosis



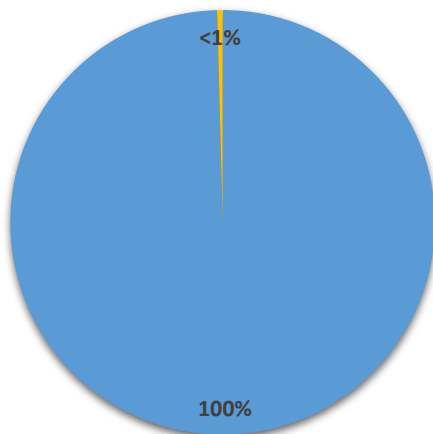
## HIV and Syphilis

Figure 67 depicts the percentage of individuals infected with both HIV and syphilis based on sex. The results show that co-infection of HIV and syphilis is almost exclusively among males, which aligns with the research presented by Refugio and Klausner (2018) mentioned earlier.

With an increase in the number of co-infections between HIV and syphilis, men living with HIV would benefit from more frequent syphilis testing. Newly diagnosed HIV-positive men should also receive syphilis testing. Out of 330 syphilis cases in 2017, 65 (or 19.6%) were HIV-positive individuals.

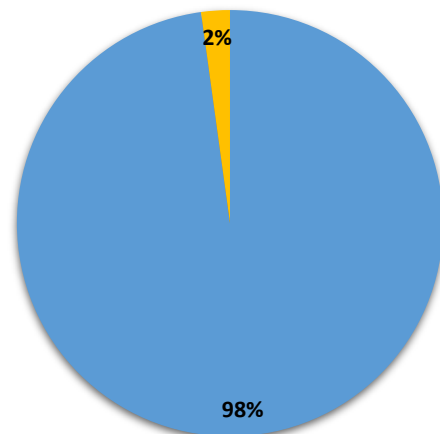
**Figure 67: HIV and Syphilis Co-Morbidity by Sex at Birth (2013-2017)**

**Prevalent HIV w/Syphilis Diagnosis**



■ Male ■ Female

**HIV & Syphilis Dual Diagnosis**



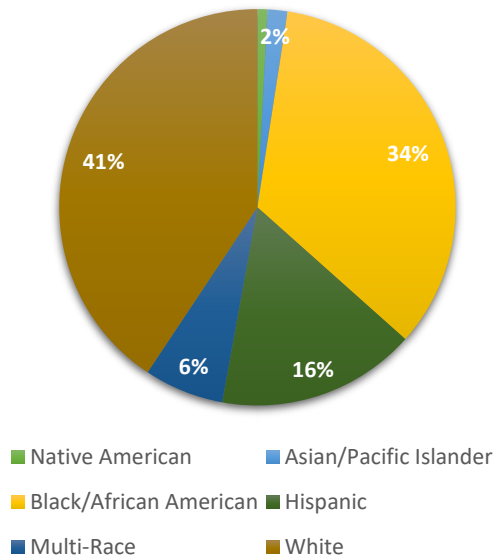
■ Male ■ Female

Figure 68 represents the percentage of individuals diagnosed with HIV and syphilis by race/ethnicity. Dual diagnosis was far more likely to have among the White population, but the Black/African American prevalent population does not trail far behind the White demographic in total co-infection cases.

According to Newton et al. (2017), a culture of shame around homosexuality, bisexual, and transgender lifestyles within the Black community has increased the risk of co-infection with HIV and syphilis. Failure to disclose sexual activities with partners of the same-sex also relate to the rise of HIV infection and HIV co-infection with other STIs among the black community.

**Figure 68: HIV Dual Diagnosis with Syphilis by Race/Ethnicity (2013-2017)**

**Prevalent HIV w/Syphilis Diagnosis**



**HIV & Syphilis Dual Diagnosis**

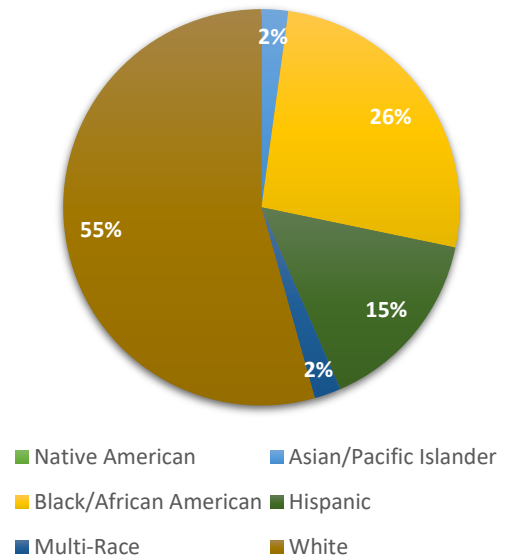
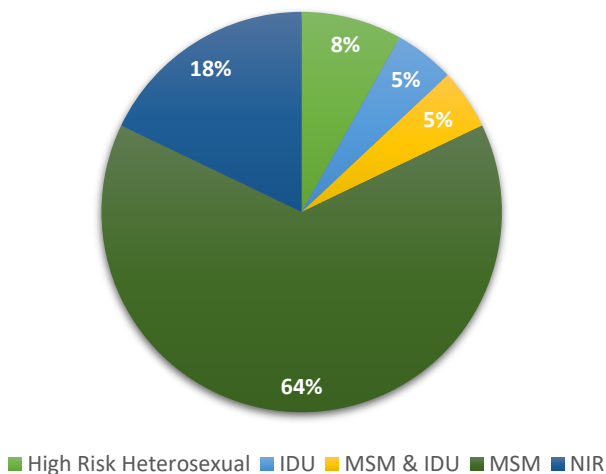


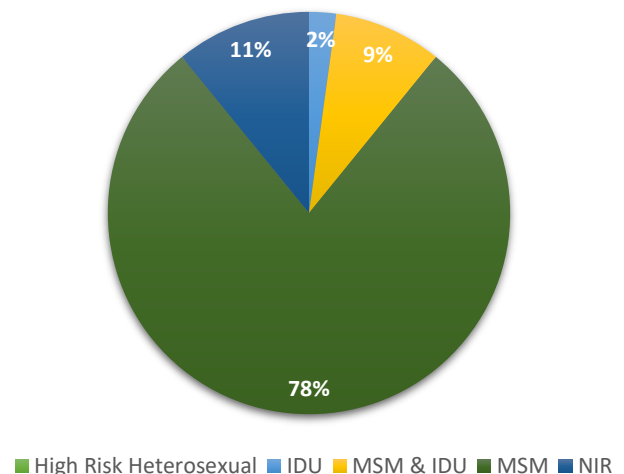
Figure 69 shows the percentage of individuals diagnosed with HIV and syphilis by transmission category. The most common risk factor among dual diagnosis and co-infection of HIV and syphilis is MSM. The proportion of IDUs that are co-infected and concurrently diagnosed are similar to the totals for HIV and chlamydia co-infections.

**Figure 69: HIV Dual Diagnosis with Syphilis by Transmission Category (2013-2017)**

**Prevalent HIV w/Syphilis Diagnosis**



**HIV & Syphilis Dual Diagnosis**



The graph in Figure 70 shows the number of new reported cases of syphilis and HIV from 2013-2017. Overall, HIV incidence has remained relatively stagnant except for the decline in 2017 while syphilis incidence has increased 61% since 2013.

**Figure 70: Newly Reported HIV and Newly Reported Syphilis Among Kansas Residents (2013-2017)**

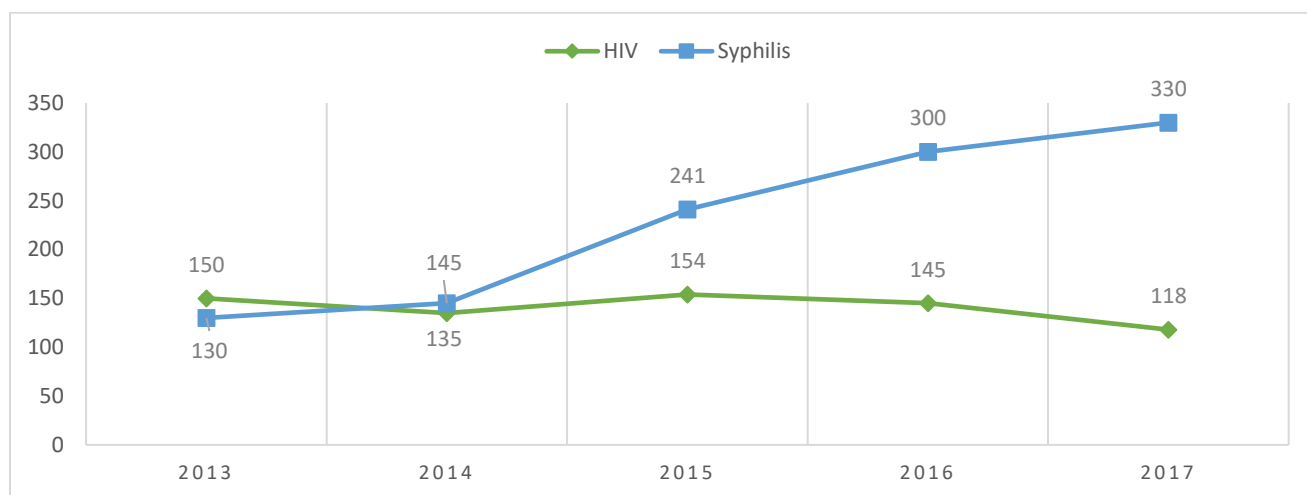


Figure 71 shows the number of reported cases for syphilis re-infection compared to total HIV and syphilis co-infection. The relationship between syphilis re-infection and syphilis co-infection with HIV is correlated. This may mean that individuals that are re-infected with syphilis are more likely to be diagnosed with HIV. Another possibility is that people HIV-positive persons with a history of syphilis diagnoses are more likely to be re-infected with syphilis again.

**Figure 71: Syphilis Co-Morbidity with HIV and Syphilis Reinfection Cases Among Kansas Residents (2013-2017)**

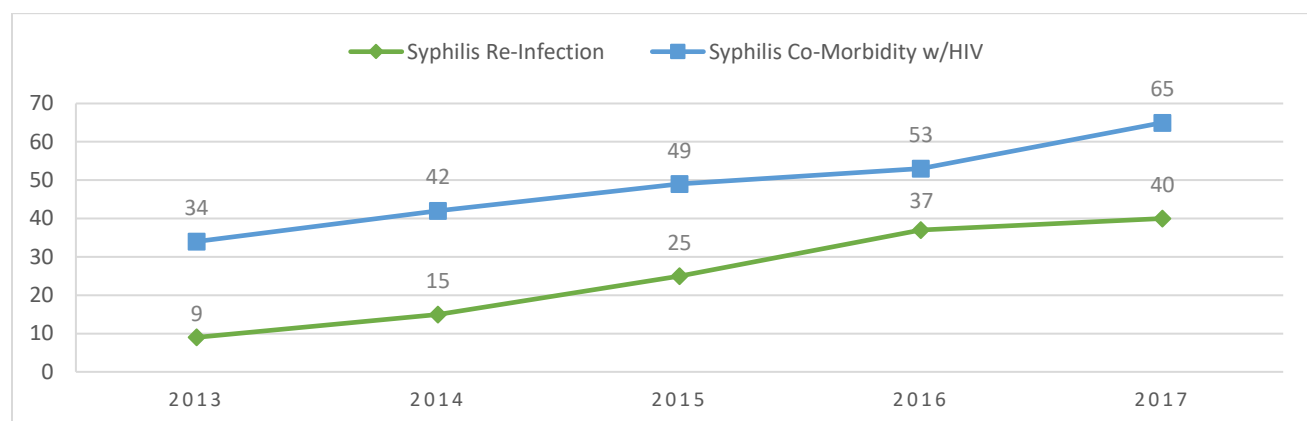


Table 25 is an illustration of HIV and syphilis co-infection by age group. Overall, individuals between the ages of 20 and 34 are more likely to be co-infected. According to the 2017 HIV Surveillance Report from CDC, there is a national decline in the rates and total cases of HIV infection among young persons between the ages of 20 and 29, but in Kansas, the number of people diagnosed with HIV within these age ranges increased in the past two years.

One possible explanation is that nationally, this demographic has higher rates of people living with HIV that are unaware of their status and that Kansas is doing a better job at locating these patients. Another explanation is

that due to barriers for access to condoms or PrEP, the numbers are increasing in this demographic. Finally, numbers may be increasing as younger individuals open up about their sexual orientation at a younger age. If the trend continues, Kansas may be at risk to have higher rates of HIV and syphilis co-infection within these same age groups. This demographic in Kansas will need to be analyzed more frequently to determine if the trend is an anomaly or significant.

**Table 25: Syphilis Co-Morbidity with HIV by Age Group, 2017**

|                    | Count | Percent |
|--------------------|-------|---------|
| <b>20-24 years</b> | 10    | 15.4%   |
| <b>25-29 years</b> | 14    | 21.5%   |
| <b>30-34 years</b> | 16    | 24.6%   |
| <b>35-39 years</b> | 6     | 9.2%    |
| <b>40-44 years</b> | 6     | 9.2%    |
| <b>45-49 years</b> | 4     | 6.2%    |
| <b>50-54 years</b> | 5     | 7.7%    |
| <b>55-59 years</b> | 3     | 4.6%    |
| <b>60+ years</b>   | 1     | 1.5%    |

## *HIV & Tuberculosis Co-Morbidity in Kansas*

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In the years 2013 – 2017, Kansas diagnosed and reported 4 persons with tuberculosis (TB) and HIV co-morbidity. During this period, a total of 200 persons were diagnosed with TB, resulting in 2% of all cases of TB having co-morbidity with HIV.

Of these four persons, all were female. Three were born outside the United States. Three were identified as Non-Hispanic Black and one White Non-Hispanic. Ages ranged from 29 to 60 years of age.

Best practice guidance directs that all persons diagnosed with TB should have a known HIV status. The goal in Kansas is to have 100% known HIV status in persons with TB while the national objective for 2020 is 98%.

Kansas is a low morbidity state with a current average annual morbidity of approximately forty cases of TB disease. There has been a steady decline of morbidity over the past twenty years.

The greatest risk in Kansas for many years has been being born outside of the United States. Foreign-born persons account for 67 – 74% of TB disease cases annually. While many studies have indicated that risk for TB is greater within the first 2 – 5 years of arrival in the U.S., in Kansas it is noted that 60% of TB disease diagnosed among the foreign-born occurred greater than 5 years after arrival in the U.S.

There has also been a recent increase in the number of pediatric persons diagnosed with TB in Kansas. When looking deeper at this issue, it is clear that almost always, these children are either foreign born refugees or immigrants or they are children of recent refugees and immigrants.

When considering race, Asian populations account for the highest rate of TB in Kansas at 23.61 per 100,000 as compared to .36 per 100,000 in Whites. The typical rate among Hispanics of all races is 3.00 per 100,000 and the rate of TB among Black/African Americans has now consistently dropped to around 1.2 per 100,000. Rarely, but occasionally, Kansas has diagnosed TB in American Indians or Pacific Islanders.

## *Part 4: Kansas Regional Profiles*

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### *Kansas Regional trends for HIV/AIDS*

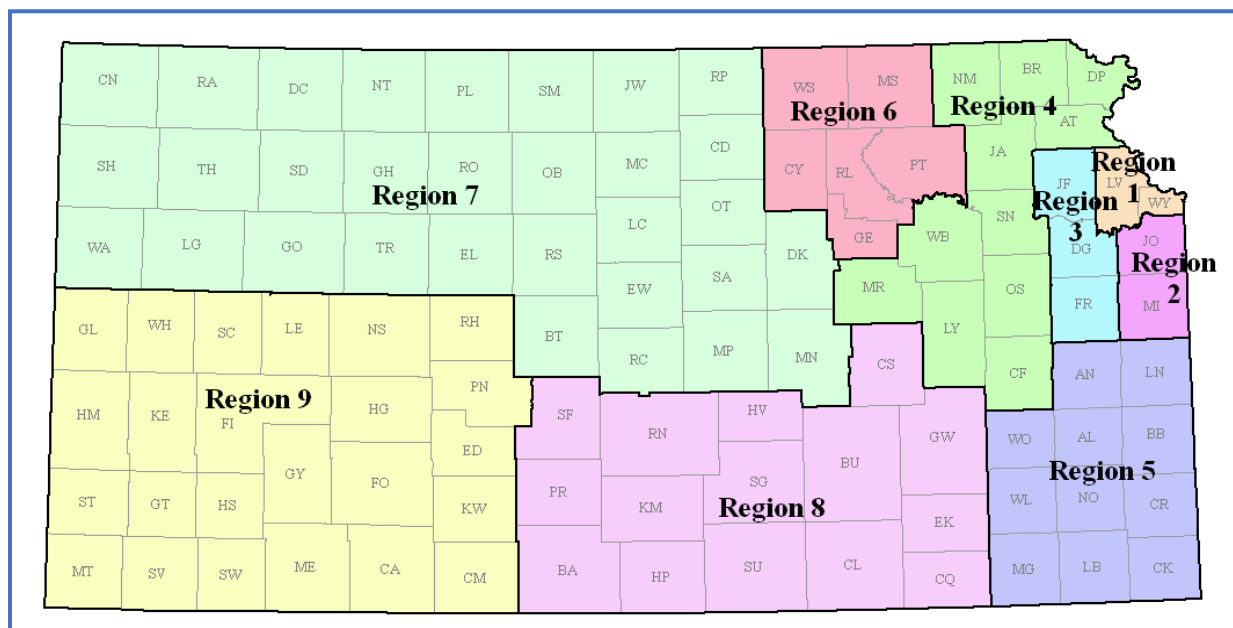
## *Kansas Regional Profile Section Highlights*

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- There are 9 HIV Regions that make up Kansas; Regions 1 and 2 are a part of the Kansas / Missouri TGA.
- Kansas is a low morbidity state, and works with extremely small numbers, especially when looking at regional data. Overall each of the HIV regions follow the same patterns of the overall HIV-population found in Kansas. The small numbers can cause the graphs to seem like there is a steep increase or decrease in trend analysis, and this may simply not be the case. Be cautious when reading the following graphs.

Kansas is divided into nine HIV-planning regions. Regional comparisons provide a basis for prevention intervention development. Kansas is a fairly stable state in terms of trend analysis and scope of the HIV epidemic. To review the overall state trend analysis, please refer to Section Two of this publication. Each region will include graphs that show incidence and prevalence comparisons and prevalence by gender, age, and exposure category. Tables and graphs depicting initial diagnosis status have been provided as well.

### Figure 72: Map of the Kansas HIV Regions



As of December 31, 2017 there was 2,927 people living in Kansas with HIV across all nine regions of Kansas. Graph 28 displays a side by side comparison of the Kansas general population and the Kansas HIV-positive population broken down by Kansas HIV Region. Region 8 (Wichita) is the leader in population levels for both the general population (27%) and HIV-positive population (32%). Region 1 (Kansas City) houses 8% of the general population, compared to 19% of the HIV-positive population, which is a disproportionate representation between the populations.

**Figure 73: Kansas General Population vs. Kansas HIV Population by Region, 2017**

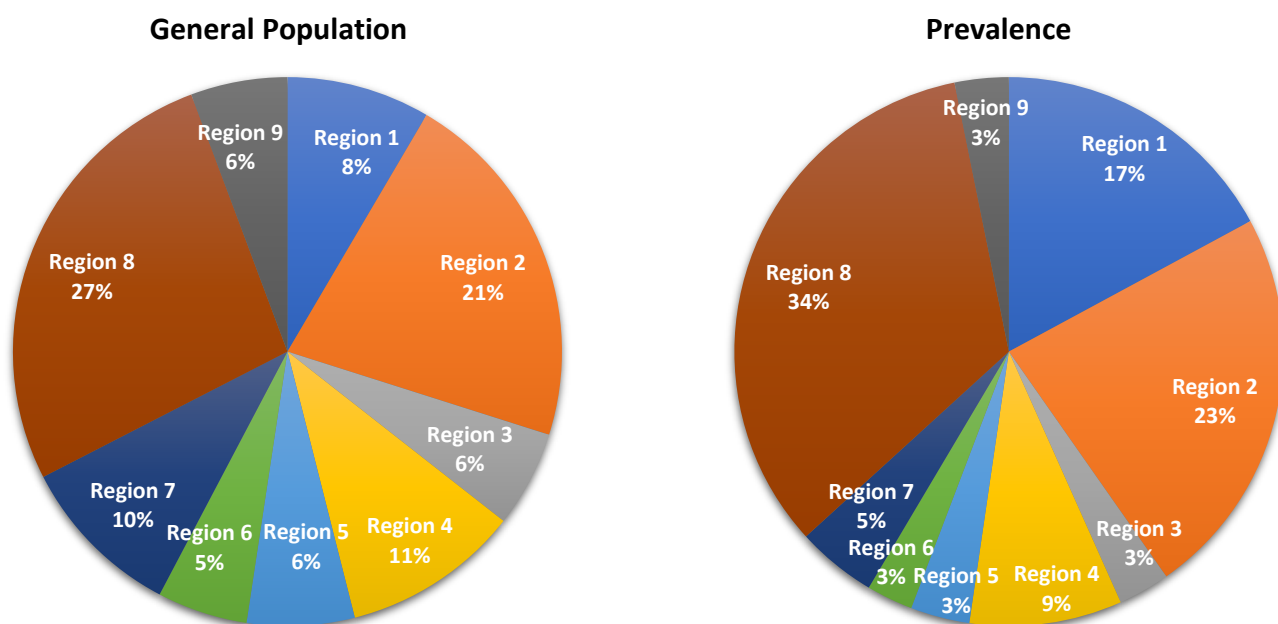


Table 8 displays prevalence of the HIV epidemic by person within each HIV region. This table displays the stability in numbers Kansas has in its HIV-positive population.

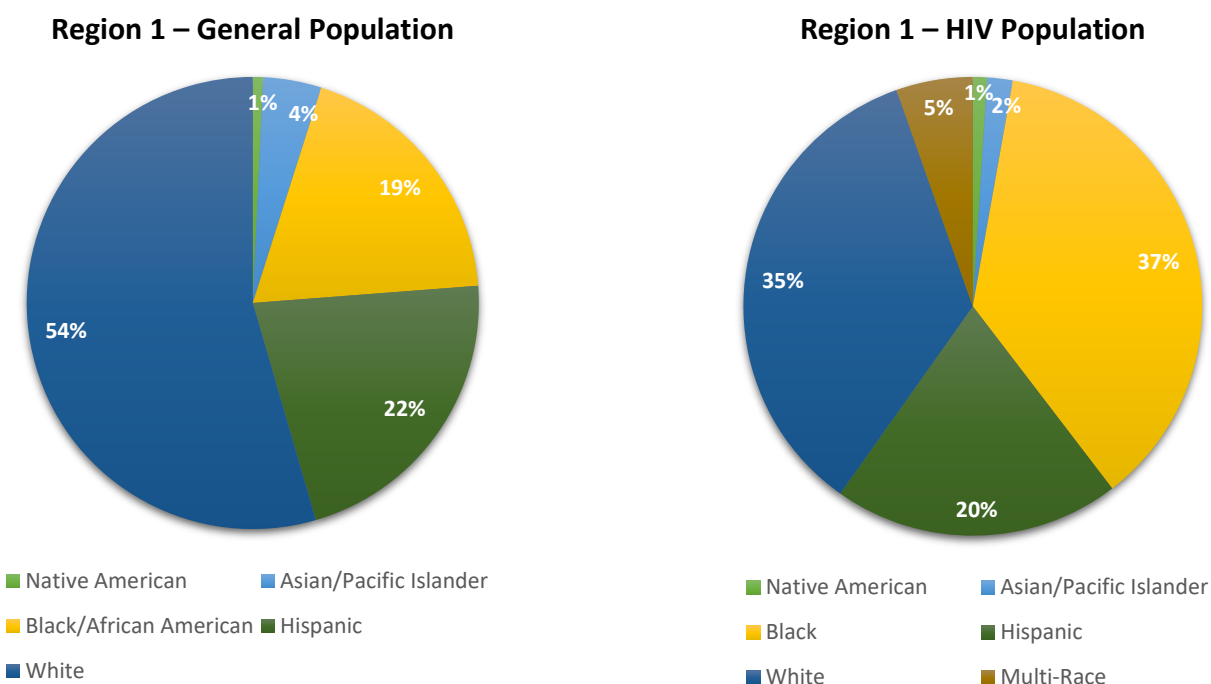
**Table 26: Prevalent HIV by Region (2013-2017)**

|                 | 2013         | 2014         | 2015         | 2016         | 2017         |
|-----------------|--------------|--------------|--------------|--------------|--------------|
| <b>Region 1</b> | 416          | 434          | 457          | 485          | 501          |
| <b>Region 2</b> | 546          | 577          | 610          | 648          | 678          |
| <b>Region 3</b> | 75           | 81           | 84           | 86           | 89           |
| <b>Region 4</b> | 224          | 236          | 245          | 254          | 263          |
| <b>Region 5</b> | 84           | 89           | 96           | 99           | 102          |
| <b>Region 6</b> | 60           | 62           | 69           | 74           | 80           |
| <b>Region 7</b> | 117          | 122          | 127          | 132          | 138          |
| <b>Region 8</b> | 798          | 844          | 902          | 948          | 983          |
| <b>Region 9</b> | 63           | 68           | 72           | 81           | 93           |
| <b>Total</b>    | <b>2,383</b> | <b>2,513</b> | <b>2,640</b> | <b>2,807</b> | <b>2,927</b> |

## Region 1 – Kansas City Area

Region 1 is in the Northeastern section of Kansas that consists of two counties: Leavenworth and Wyandotte. This area is a part of the Kansas City Transitional Grant Area (TGA), which is the Kansas City region that overlaps the Kansas-Missouri border. This is also the smallest geographical region in the state. In 2017, the estimated population of Region 1 was 246,383. Region 1 consisted of 501 prevalent HIV cases by December 31, 2017. While Region 1 consists of 8% of the general population, it is home to 17% of the HIV-positive population, which is a disproportionate representation between the populations. Of the 501 prevalent cases, 414 persons living in Region 1 were geocoded for analyzing social determinants of health.

**Figure 74: Kansas HIV Prevalence in Region 1 by Race/Ethnicity, 2017**



In Region 1, most people living with HIV are Black/African American persons but only make up 19% of the general population in the region (Figure 73). Among this demographic, many HIV-positive persons are male but incidence from the last five years show an above average diagnosis rate among Black/African American females (Figure 74). Among the Hispanic/Latino population, Figure 73 and Figure 74 shows that the prevalence numbers are representative of the general population, but within the last five years, 34% of all new diagnoses were among the Hispanic demographic. 30% of persons diagnosed with HIV since 2013 are Hispanic males.

Incidence within the last five years among White persons compared to total prevalence show a significant decline in diagnoses. Minorities are more affected by the HIV epidemic in Region 1 and the comparison of prevalence and incidence in Figure 74 shows that diagnoses among Black/African American males may be declining and that there is a significant spike in the number of Hispanic males diagnosed in the region.

**Figure 75: Region 1 - HIV Incidence and Prevalence by Race/Ethnicity and Sex at Birth, 2017**

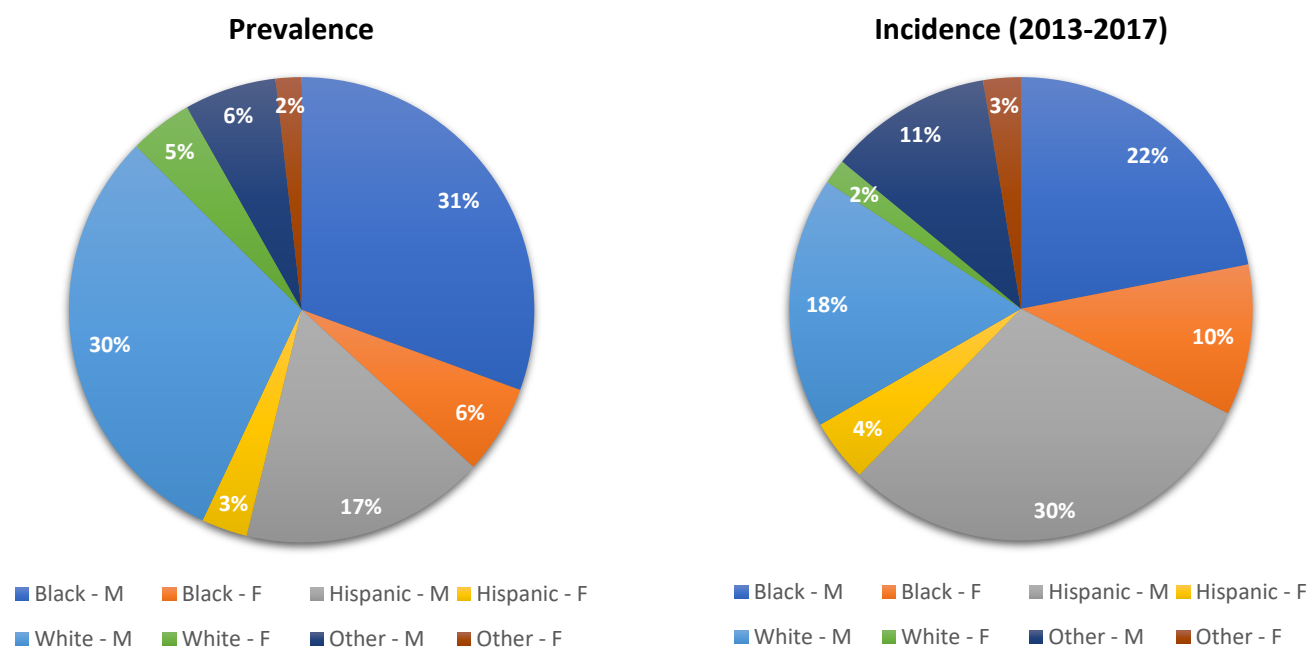


Table 27 is a breakdown of the HIV population in Region 1 by age where the majority of people living with HIV are between the ages of 40 and 59. This is comparable to the national trend mentioned in Section 2 of the report. Within the last five years, incidence was highest among the 20 to 24 and 30 to 34 age groups.

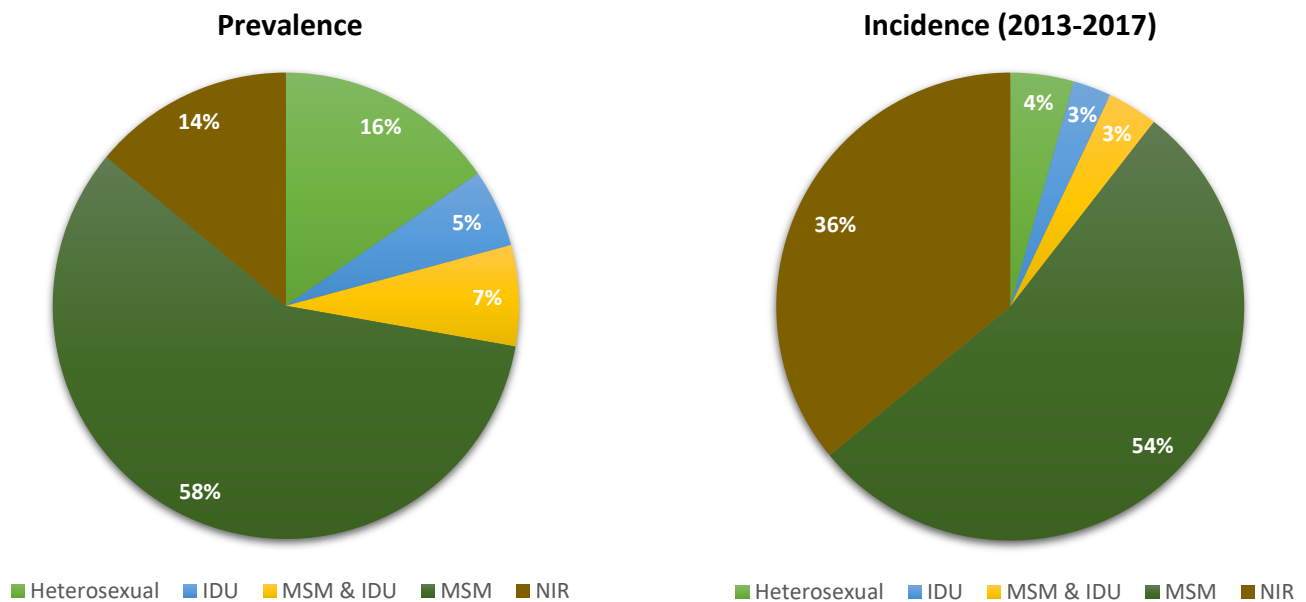
**Table 27: Region 1 - HIV Prevalence (2017) and Incidence (2013-2017) by Age Group**

|                 | Prevalence | Incidence |
|-----------------|------------|-----------|
| <b>0 to 4</b>   | 0          | 0         |
| <b>5 to 9</b>   | 0          | 0         |
| <b>10 to 14</b> | 1          | 0         |
| <b>15 to 19</b> | 0          | 7         |
| <b>20 to 24</b> | 21         | 23        |
| <b>25 to 29</b> | 49         | 17        |
| <b>30 to 34</b> | 55         | 23        |
| <b>35 to 39</b> | 53         | 14        |
| <b>40 to 44</b> | 70         | 8         |
| <b>45 to 49</b> | 72         | 7         |
| <b>50 to 54</b> | 61         | 6         |
| <b>55 to 59</b> | 65         | 5         |
| <b>60 to 64</b> | 34         | 2         |
| <b>65+</b>      | 20         | 2         |

Figure 75 shows that the majority of people in Region 1 living with HIV are men who have sex with men (MSM) and with an above average heterosexual transmission rate of 16%. Within the last five years, MSM transmission was lower than its prevalence total, but the No Identified Risk (NIR) category significantly increased. One potential reason for this is that among heterosexual transmission, it is difficult to conclude which type heterosexual risk factor infected the newly diagnosed individual. This may be because their partner did not admit to injection drug use or having sex with men or because the patient did not give or did not know the information of some of their partners.

A second possibility is that with an increase of HIV among minority populations, stigma within their community may have prevented the patient from exposing important details about transmission. Finally, surveillance may have missed details about exposure and transmission during follow-up investigations. The latter possibility will be looked into and reflected in the next report.

**Figure 76: Region 1 - HIV Incidence and Prevalence by Exposure Category, 2017**



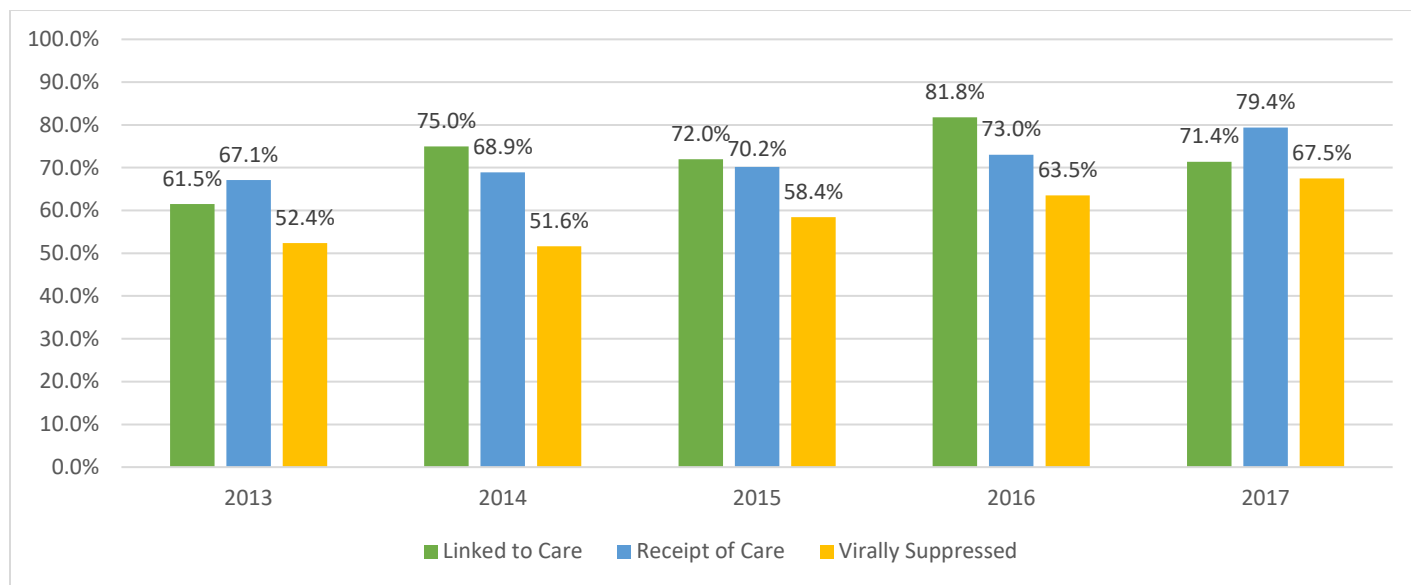
From 2013-2017, the majority of diagnoses in Region 1 were HIV only. 18 patients were diagnosed with HIV and Stage 3 simultaneous and 18 diagnosed with Stage 3 within 12 months. The remaining 78—or 68% of cases—were diagnosed with HIV only.

**Table 28: Region 1 - Incidence Diagnosis Status (2013-2017)**

|             | Initial HIV Only | Stage 3 within 12 Months of HIV Dx | Concurrent HIV & Stage 3 | Total |
|-------------|------------------|------------------------------------|--------------------------|-------|
| <b>2013</b> | 18               | 5                                  | 3                        | 26    |
| <b>2014</b> | 10               | 4                                  | 6                        | 20    |
| <b>2015</b> | 18               | 4                                  | 3                        | 25    |
| <b>2016</b> | 17               | 3                                  | 2                        | 22    |
| <b>2017</b> | 15               | 2                                  | 4                        | 21    |

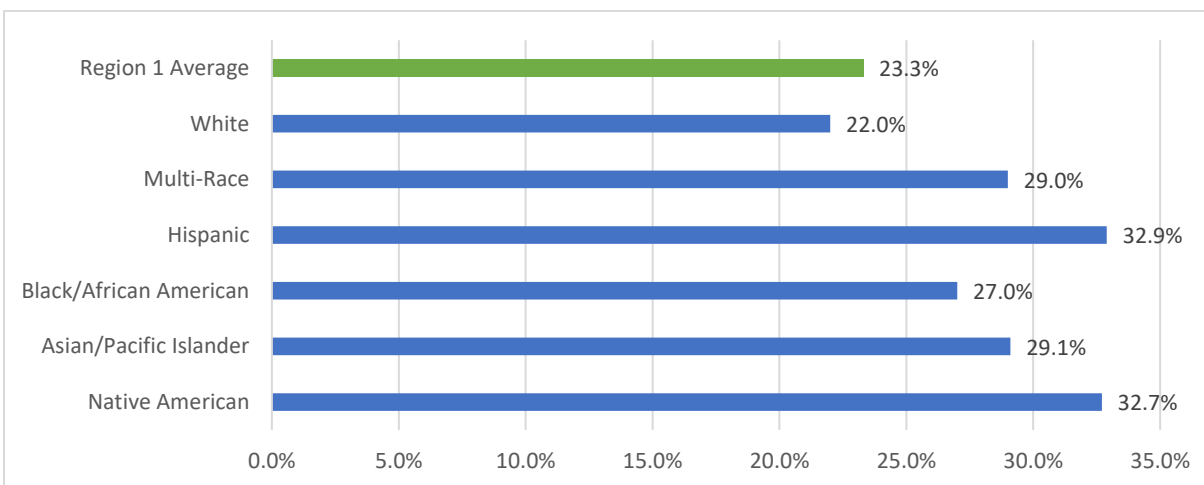
In 2017, 103 people living in Region 1 did not receive a CD4 or Viral Load test. Region 1 and Region 2 are the most affected regions by the reporting laws because two hospital laboratories did not report all Viral Load results to the state. While they were not required to do so, it does affect the data seen in Figure 76, and the numbers for each year among Receipt of Care and Virally Suppressed are likely higher. Despite the barrier to gaining Viral Load and CD4 results, Region 1 achieves higher viral suppression rates than the national average.

**Figure 77: Region 1 - Continuum of Care (2013-2017)**



In Region 1, 23.3% of the general population lives below the federal poverty line. Figure 77 shows that the White HIV population lives slightly below this average while minority populations, especially Native Americans and Hispanic/Latinos, live below the poverty line at much higher rates. By sex at birth, seen in Figure 78, both males and females diagnosed with HIV are more likely to live below the poverty line than the general population with HIV-positive females experiencing higher rates than the male demographic.

**Figure 78: Region 1 - Poverty Rates Among HIV-Positive Kansans vs. Region 1 General Population by Race/Ethnicity**



**Figure 79: Region 1 - Poverty Rates Among HIV-Positive Kansans by Sex at Birth**

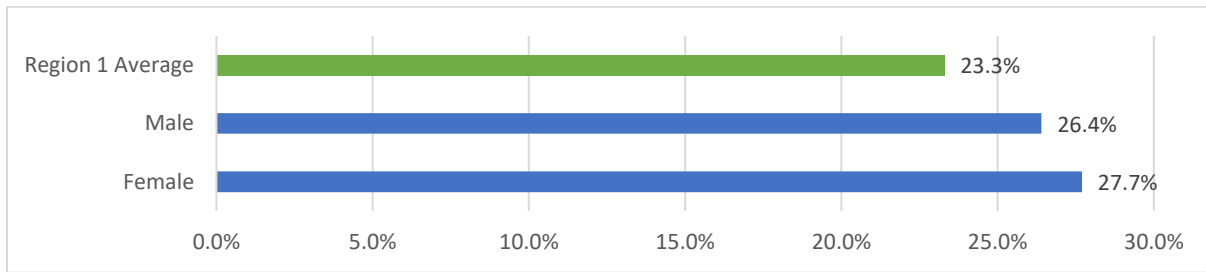
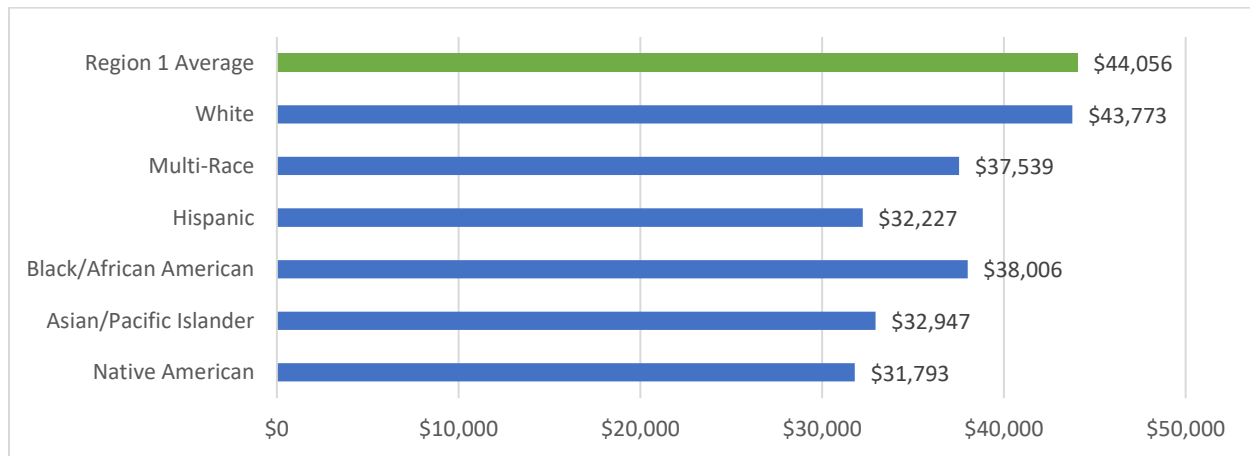
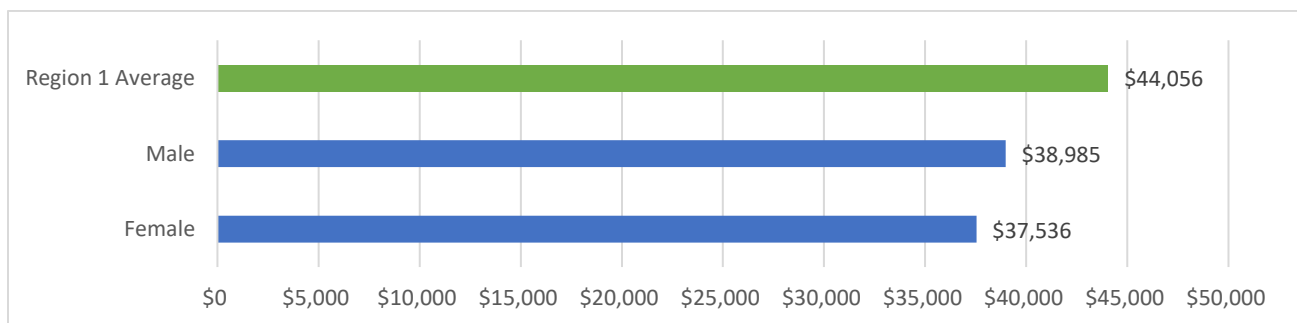


Figure 79 and Figure 80 show that every demographic living with HIV in Region 1 are below the average of the general population in median household income. In Figure 79, the Hispanic, Asian, and Native American HIV populations are more than \$10,000 below the median household income average for the general population. The White HIV-positive population make only slightly less than average. In Figure 80, male and females living with HIV have similar median household incomes but both demographics are below the regionally average.

**Figure 80: Region 1 - Median Household Income Among HIV-Positive Kansans vs. Region 1 General Population by Race/Ethnicity**



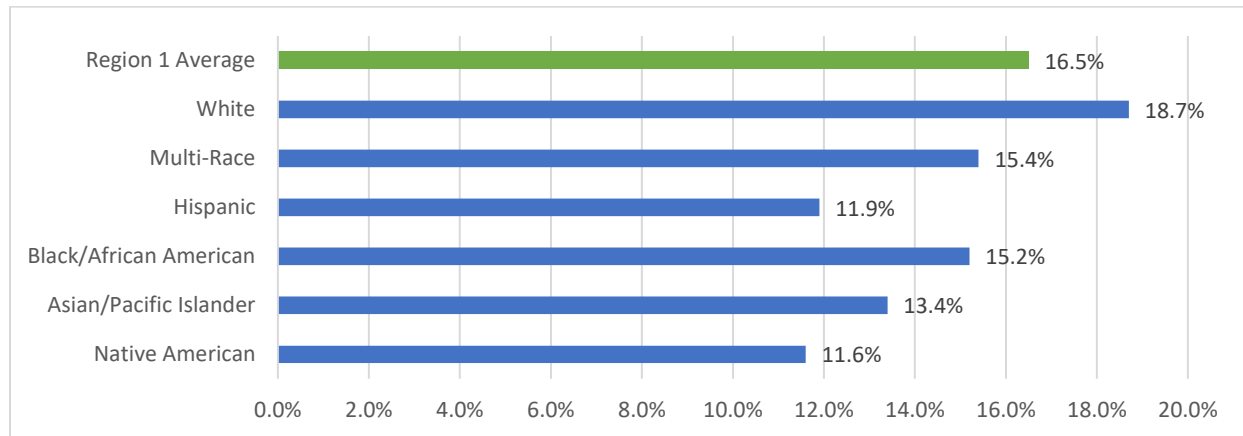
**Figure 81: Region 1 - Median Household Income Among HIV-Positive Kansans by Sex at Birth**



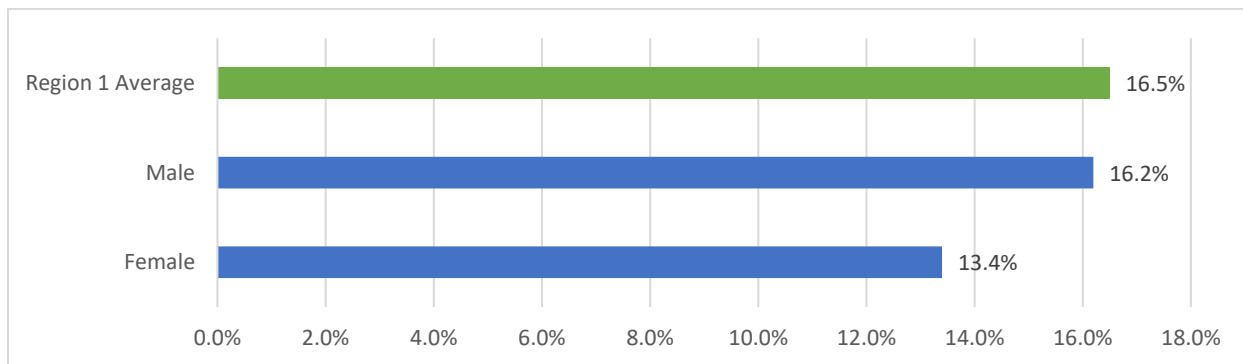
The estimated percentage of people living with HIV in Region 1 that hold a bachelor's degree is highest among the White population, which is above the general populations' average in the region. Figure 81 shows the Hispanic and Native Americans living with HIV are far less likely to have graduated from college. There is also a

more significant sex at birth gap among the HIV population. In Figure 82, males living with HIV are almost just as likely to have a bachelor's degree as the region's average, but females are close to three points lower.

**Figure 82: Region 1 - HIV-Positive Kansans with a Bachelor's Degree vs. Region 1 General Population by Race/Ethnicity**



**Figure 83: Region 1 - HIV-Positive Kansans with a Bachelor's Degree by Sex at Birth**

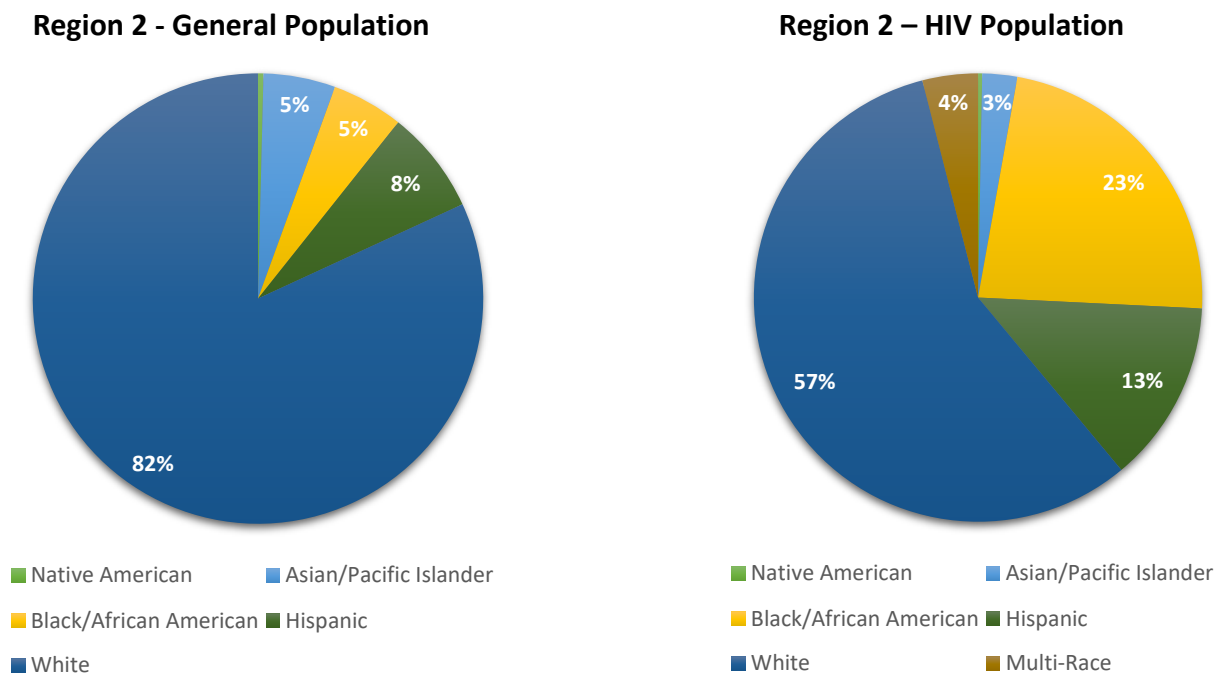


## Region 2 – Kansas City Suburbs

Region 2 is in the northeastern section of Kansas and consists of Johnson and Miami counties. This area is a part of the Kansas City Transitional Grant Area (TGA), the Kansas City region that overlaps the Kansas and the Missouri border. In 2017, the estimated population of Region 2 was 624,639. Region 2 consisted of 678 prevalent HIV cases by December 31, 2017. Region 2 has both the second largest general population and HIV-positive population in Kansas. Of the 678 persons living with HIV in Region 2, 501 were analyzed for social determinants of health.

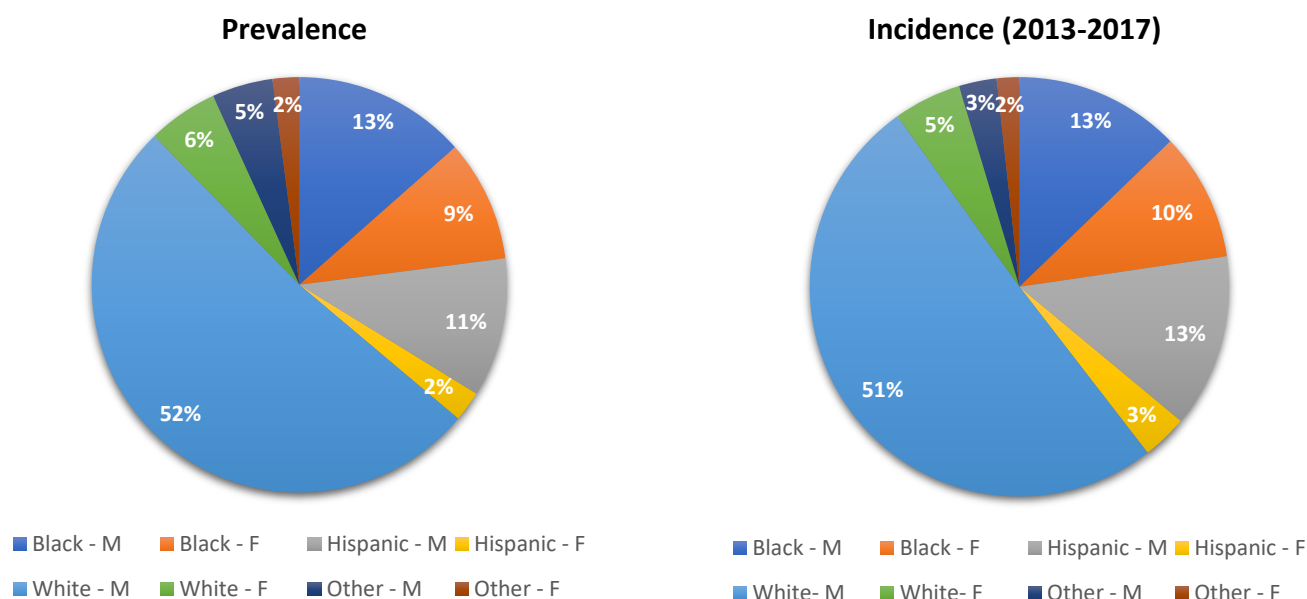
Compared to the general population, Black/African American persons are disproportionately affected by HIV. While making up 5% of the general population, this demographic makes up 23% of all prevalent HIV cases in Region 2. The Hispanic population is also disproportionately affected, making up 8% of the general population but 13% of the HIV population.

**Figure 84: HIV Prevalence in Region 2 by Race/Ethnicity, 2017**



As shown in Figure 84, there are minimal differences between the diagnosed prevalence and incidence populations in Region 2 compared to the analysis from Region 1. Hispanic males and Black/African males make up the same proportion of HIV incidence between 2013 and 2017 but the Black/African American female population is equivalent to all other female racial/ethnic demographics combined.

**Figure 85: Region 2 - HIV Incidence and Prevalence by Race/Ethnicity and Sex at Birth, 2017**



Most newly diagnosed cases within Region 2 from 2013 to 2017 are people between the ages of 25 and 34. As shown in Table 29, there is an older population currently living with HIV in Region 2 compared to the other regions in Kansas with 107 people between age 50 and 54. As we look at some of the social determinants of health later in this section, there are some variables that may explain why.

**Table 29: Region 2 - HIV Incidence and Prevalence by Age Group (2013-2017)**

|                 | Prevalence | Incidence |
|-----------------|------------|-----------|
| <b>0 to 4</b>   | 1          | 1         |
| <b>5 to 9</b>   | 3          | 2         |
| <b>10 to 14</b> | 8          | 1         |
| <b>15 to 19</b> | 3          | 7         |
| <b>20 to 24</b> | 19         | 21        |
| <b>25 to 29</b> | 46         | 29        |
| <b>30 to 34</b> | 67         | 26        |
| <b>35 to 39</b> | 64         | 20        |
| <b>40 to 44</b> | 86         | 20        |
| <b>45 to 49</b> | 88         | 15        |
| <b>50 to 54</b> | 107        | 9         |
| <b>55 to 59</b> | 80         | 9         |
| <b>60 to 64</b> | 50         | 6         |
| <b>65+</b>      | 56         | 6         |

Figure 85 shows similar results to the risk factors and exposure categories from Region 1 with an inflated number of NIR persons and a significant decline in the high-risk heterosexual category. In Region 2, it is also likely that

establishing what kind of high-risk heterosexual contact newly diagnosed patients were engaged in causes the inflated number of NIRs. An additional possibility relevant to Region 1 and Region 2 may include the intake of refugees that were diagnosed in their home country, but we did not determine whether they were born with HIV or contracted the virus from other means.

Between 2009 and 2018, Kansas City took in over 4,300 refugees. Many of which came from Somalia, Burma (Myanmar), Democratic Republic of Congo, and Iraq. Three of these countries have experienced war within the last 20 years, which some studies show affect HIV transmission rates due to the destruction of critical health infrastructures. Surveillance estimates that refugees make up 16% of all new cases between Region 1 and Region 2 from 2013 to 2017. Where the identification of being a new case often means new to the United States even though diagnosed in their home country.

**Figure 86: Region 2 - HIV Incidence and Prevalence by Exposure Category, 2017**

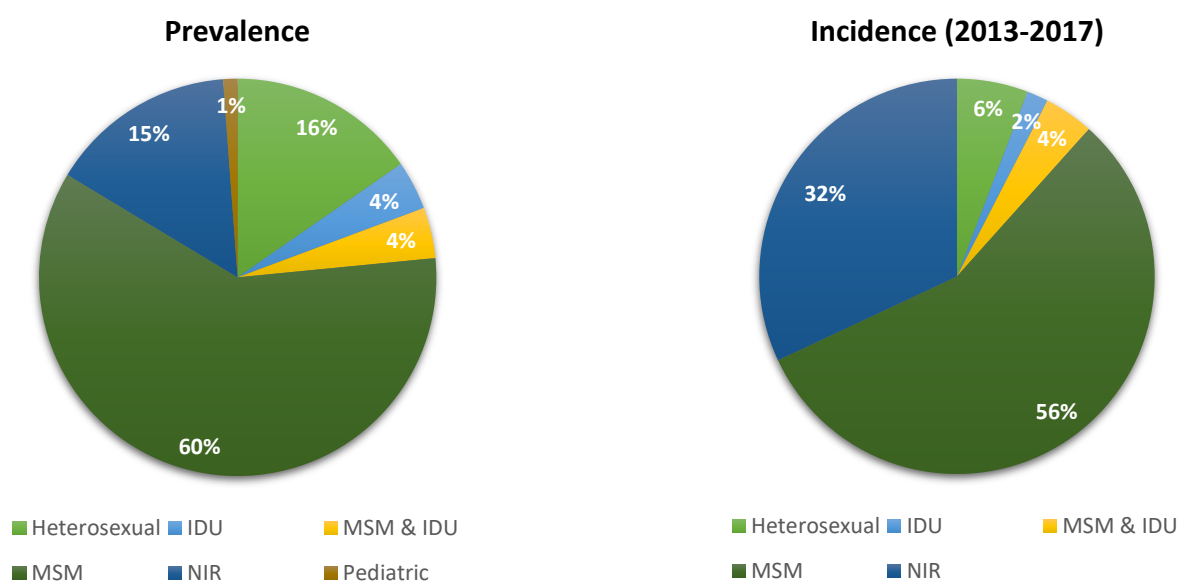


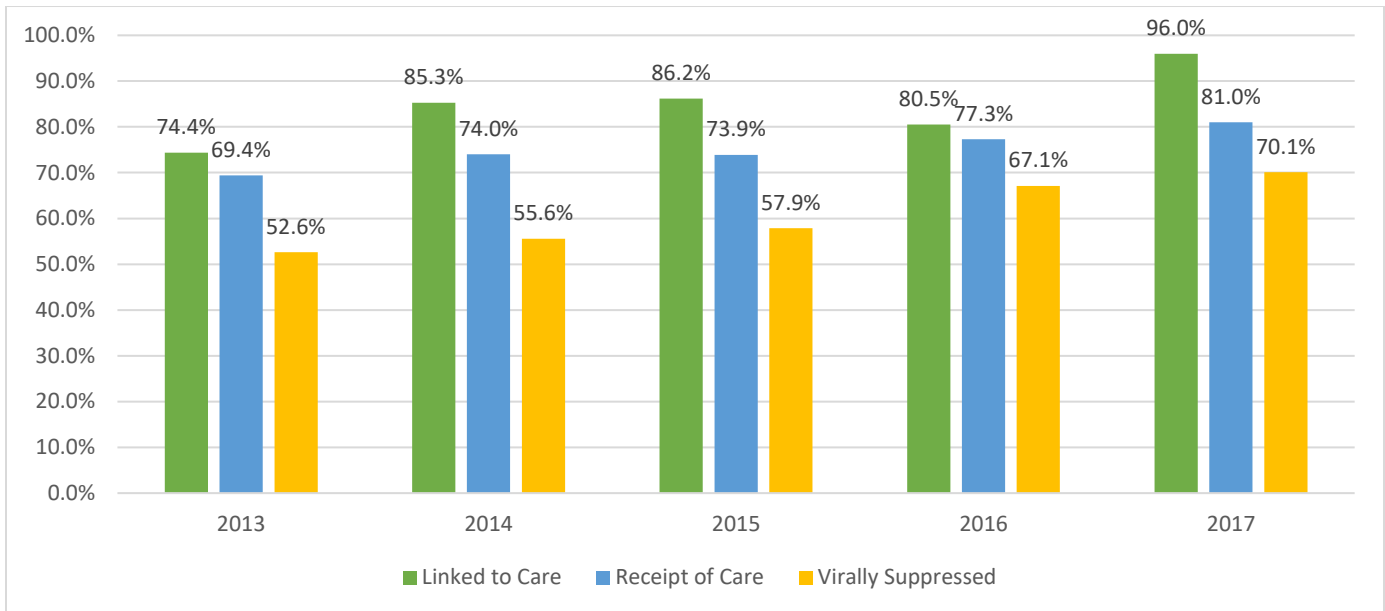
Table 30 shows that 31% of newly diagnosed patients with HIV were also diagnosed as Stage 3 either concurrently or within 12 months of diagnosis. These rates are slightly higher than Region 1 with 69% of the incidence population being diagnosed with HIV only.

**Table 30: Region 2 - Incidence Diagnosis Status (2013-2017)**

|             | Initial HIV Only | Stage 3 Within 12 Months of Dx | Concurrent HIV & Stage 3 | Total |
|-------------|------------------|--------------------------------|--------------------------|-------|
| <b>2013</b> | 28               | 6                              | 9                        | 43    |
| <b>2014</b> | 22               | 6                              | 6                        | 34    |
| <b>2015</b> | 18               | 3                              | 8                        | 29    |
| <b>2016</b> | 32               | 4                              | 5                        | 41    |
| <b>2017</b> | 19               | 2                              | 4                        | 25    |

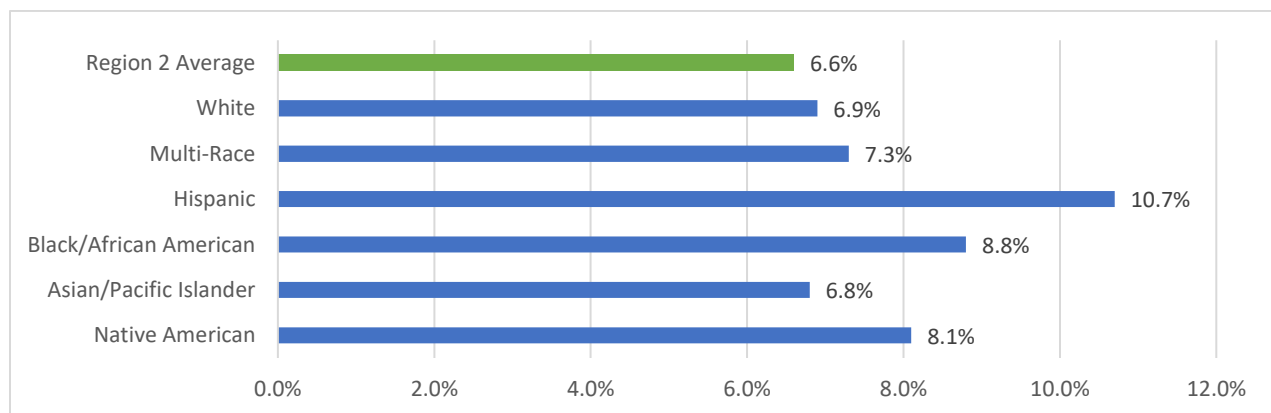
Within the last five years, viral suppression and receipt of care have increased in Region 2. Once again, this is due in part to reporting laws in the state of Kansas that did not require reporting CD4s above 500 cells/uL or Viral Loads that were undetectable. Figure 86 shows that in 2017, 96% of newly diagnosed patients were linked to care with a Viral Load and CD4 test within one month of diagnosis. In all five years, the viral suppression rate in Region 2 was above the national average.

**Figure 87: Region 2 - Continuum of Care (2013-2017)**



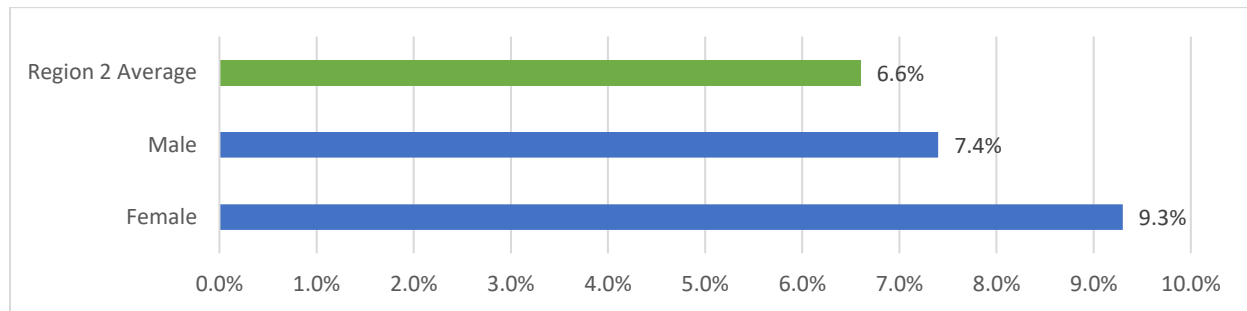
Overall, the general population Region 2 have lower rates of poverty, higher median household incomes, and higher rates of college completion than any other region in Kansas. Compared to Region 2 averages, the HIV population is still affected in various ways. Figure 87 illustrates that all racial/ethnic demographics live at higher rates of poverty than the regional average with the Hispanic population most affected. 10.7% of Hispanic HIV-positive persons and 8.8% of Black/African American HIV-positive persons live below the federal poverty line.

**Figure 88: Region 2 - Poverty Rates Among HIV-Positive Kansans vs. Region 2 General Population by Race/Ethnicity**



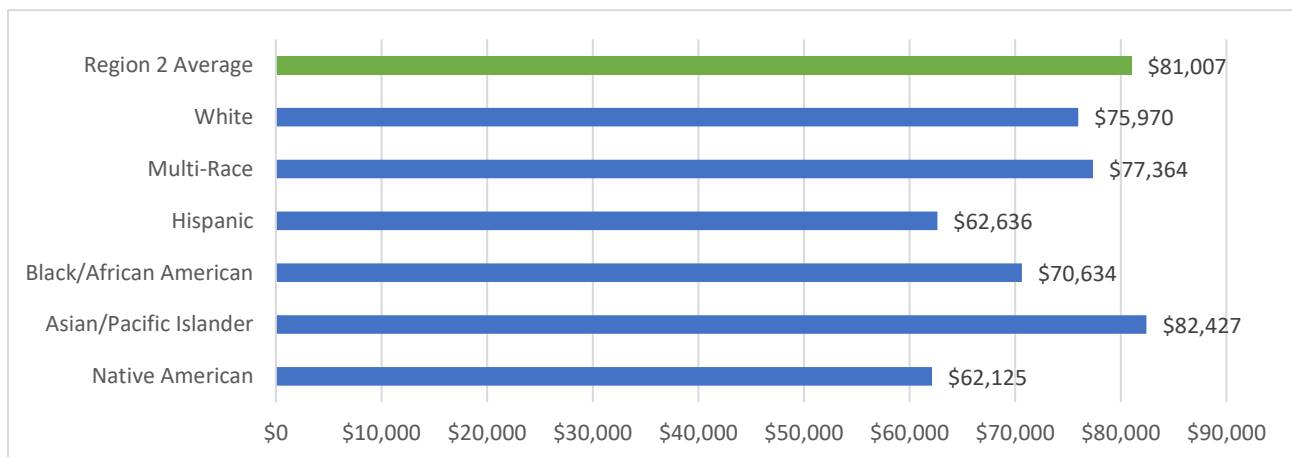
While minorities are disproportionately affected in Region 2 with HIV and are more likely to be living in poverty, females living with HIV are also more likely to be living in poverty. When comparing Figure 87 and Figure 88, HIV-positive females and HIV-positive Hispanic persons live with the highest rates of poverty in Region 2.

**Figure 89: Region 2 - Poverty Rates Among HIV-Positive Kansans by Sex at Birth**

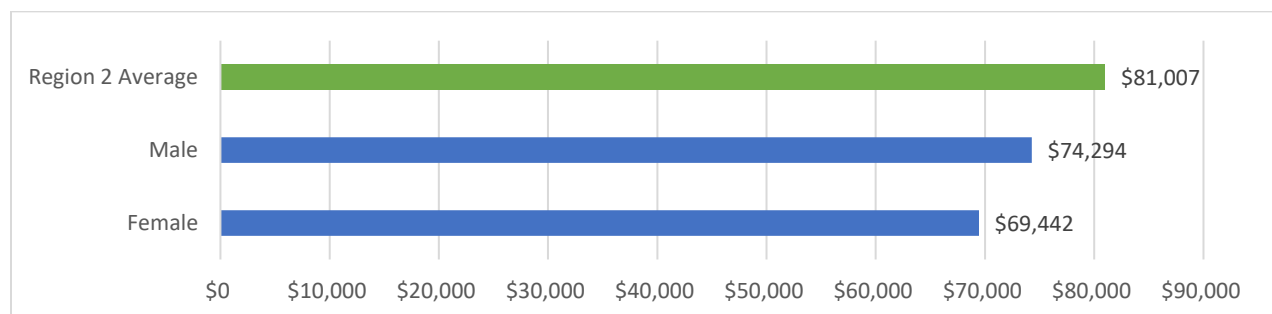


Median household income among people living with HIV is lower than the general population's regional average except for the Asian/Pacific Islander HIV population. As seen in Figure 89 and Figure 90, Native American, Hispanic, and Black/African American HIV-positive persons as well as females have the lowest median household incomes. Each of these demographics have at least \$10,000 less in median household income than the regional average.

**Figure 90: Region 2 - Median Household Income Among HIV-Positive Kansans vs. Region 2 General Population by Race/Ethnicity**

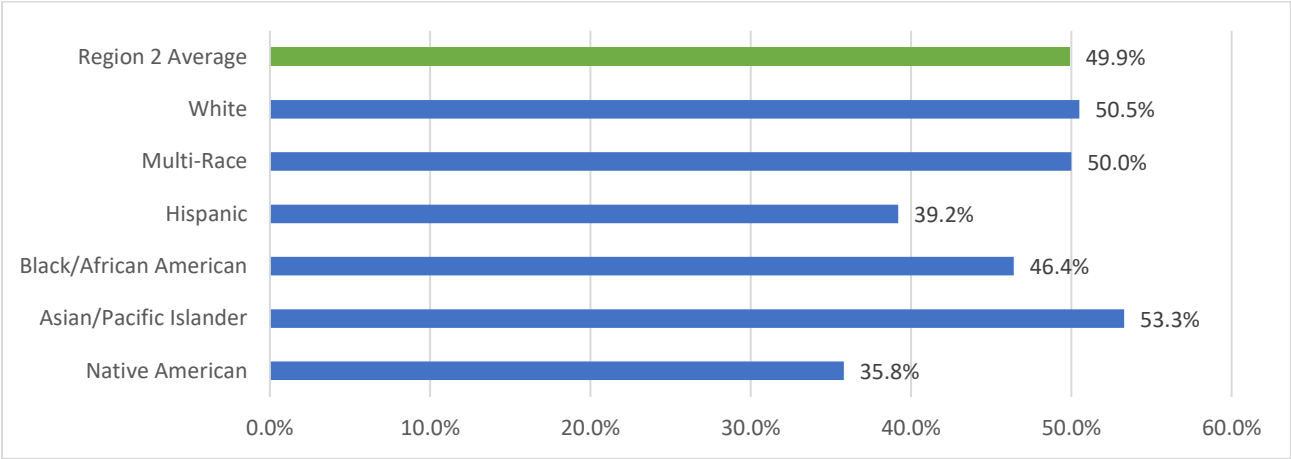


**Figure 91: Region 2 - Median Household Income Among HIV-Positive Kansans by Sex at Birth**

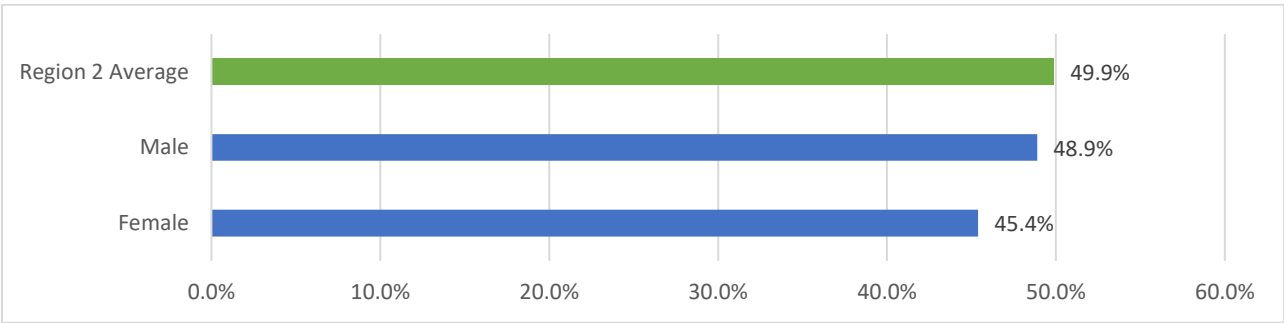


Among HIV-positive persons that obtained a Bachelor’s Degree, three demographics are higher than the general population’s average in Region 2: White, Multi-Race, and Asian/Pacific Islander. HIV-positive Native Americans and Hispanics have the lowest averages, but their averages in this region are still higher than the statewide average.

**Figure 92: Region 2 - HIV-Positive Kansans with a Bachelor's Degree vs. Region 2 General Population by Race/Ethnicity**



**Figure 93: Region 2 - HIV-Positive Kansans with a Bachelor's Degree by Sex at Birth**



## Region 3 – Lawrence

Region 3 is in the northeastern section of Kansas and consists of three counties: Douglas, Jefferson, and Franklin. Douglas County, home to the city of Lawrence, includes the main campuses of the University of Kansas and Haskell Indian Nations University. Region 3 has the second largest proportion of Native American residents in the state. In 2017, the estimated population of Region 3 was 165,524. Region 3 consisted of 89 prevalent cases by December 31, 2017. Of the 89 prevalent cases, 79 were geocoded to analyze the social determinants of health.

Figure 93 illustrates demographic breakdowns by race/ethnicity where the HIV-positive Black/African American are disproportionately affected compared to the region's general population. While Black/African American persons make up 4% of the population, they make up 17% of the HIV-positive population in the region.

**Figure 94: HIV Prevalence in Region 3 by Race/Ethnicity, 2017**

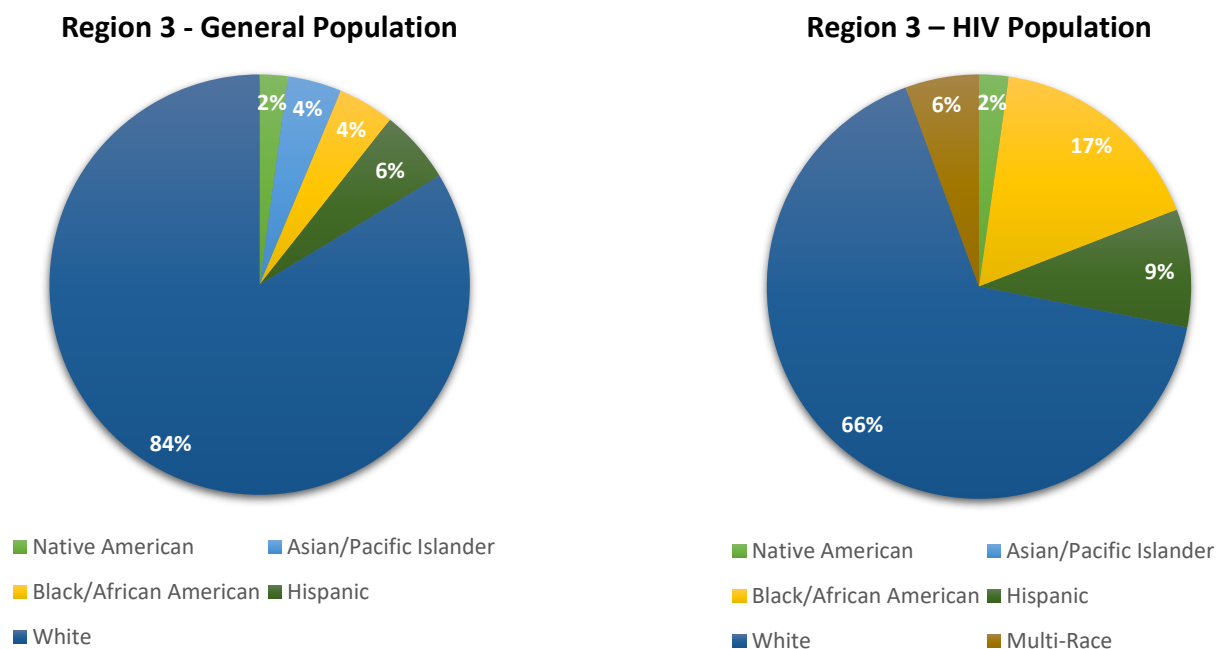
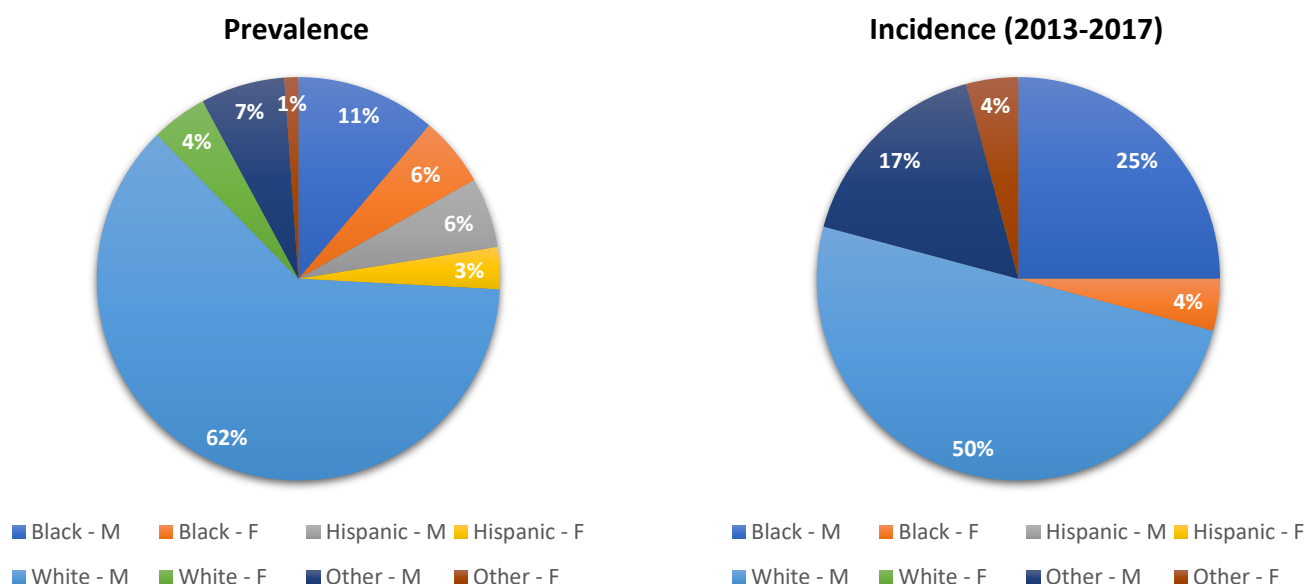


Figure 95 shows that within the last five years, the Black/African American population in Region 3 are becoming more disproportionately affected by HIV. Between 2013 and 2017, the Black/African American population made up 29% of all new cases; the majority being male. There was also an increase among the Other - Male category, which in the case of Region 3 includes Native American and Multi-Racial persons. However, the sample size in Region 3 is small with 24 new cases since 2013, which makes it difficult to detect any significant trend. With most of the cases in Lawrence, this is also a region where people move in and out of frequently due to enrollment in college and graduation from college. As of 2017, the University of Kansas had a student body size of 24,891 people (not including KU Medical Center), which represents a little more than a quarter of the total Lawrence population.

**Figure 95: Region 3 - HIV Incidence and Prevalence by Race/Ethnicity and Sex at Birth, 2017**



In Region 3, most of the new HIV diagnoses were between the age of 15 and 24, making it the region for the youngest new HIV-positive patients in Kansas. The majority of the prevalent HIV population were between the ages of 45 and 54.

**Table 31: Region 3 - HIV Prevalence (2017) and Incidence (2013-2017) by Age Group**

|                 | Prevalence | Incidence |
|-----------------|------------|-----------|
| <b>0 to 4</b>   | 0          | 0         |
| <b>5 to 9</b>   | 1          | 0         |
| <b>10 to 14</b> | 1          | 0         |
| <b>15 to 19</b> | 0          | 4         |
| <b>20 to 24</b> | 5          | 5         |
| <b>25 to 29</b> | 6          | 2         |
| <b>30 to 34</b> | 9          | 3         |
| <b>35 to 39</b> | 7          | 2         |
| <b>40 to 44</b> | 8          | 2         |
| <b>45 to 49</b> | 16         | 1         |
| <b>50 to 54</b> | 14         | 2         |
| <b>55 to 59</b> | 9          | 1         |
| <b>60 to 64</b> | 8          | 2         |
| <b>65+</b>      | 5          | 0         |

In figure 96, most of the HIV-positive population in Region 3 are MSM. While the NIR category from incidence is high, the majority of these cases are likely high-risk heterosexual and IDU. Region 3 has a higher proportion of MSM & IDU persons that are diagnosed with HIV than regions 1 and 2. Region 3 also has a smaller proportion of high-risk heterosexual persons living with HIV than the previously discussed regions.

**Figure 96: Region 3 - HIV Incidence and Prevalence by Exposure Category, 2017**

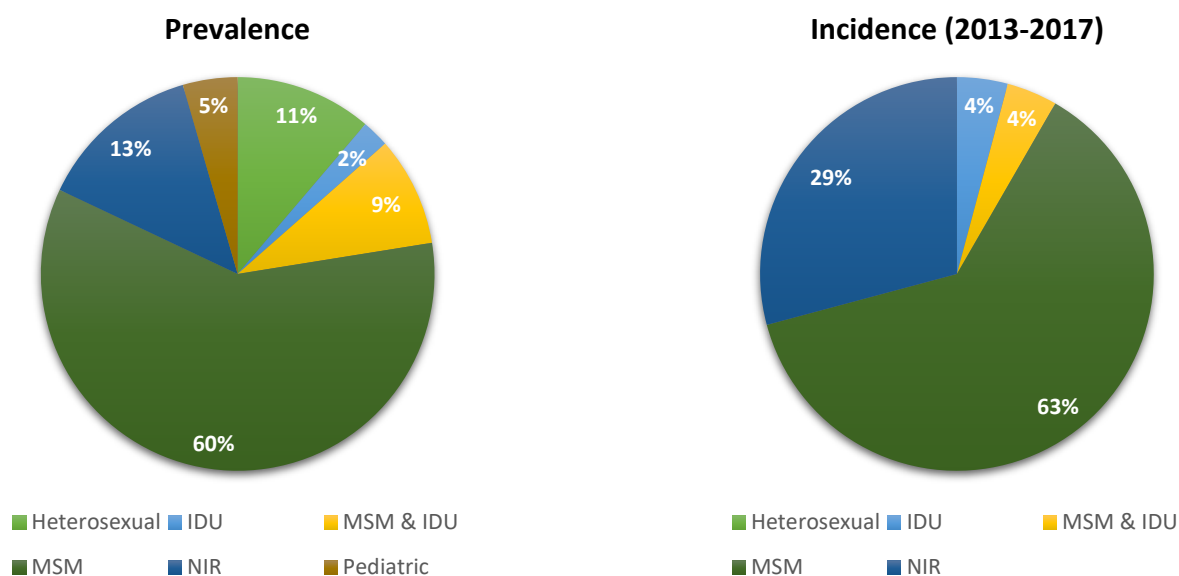


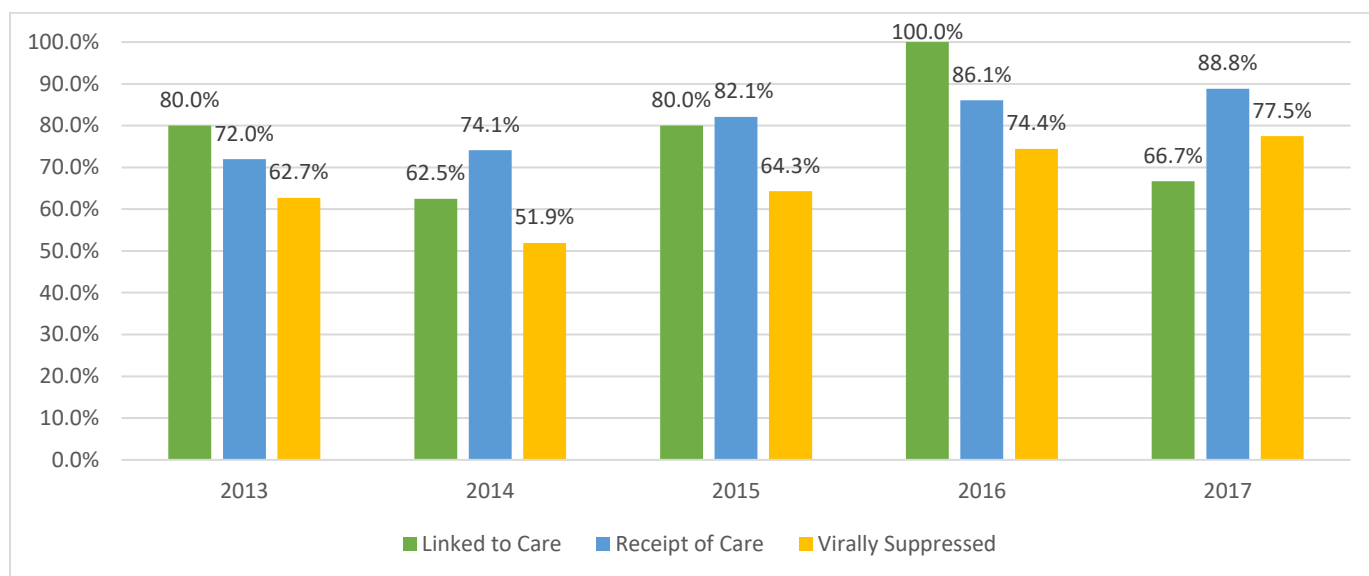
Table 32 shows that 29% of patients diagnosed with HIV were diagnosed concurrently or within 12 months as Stage 3. Due to low incidence, it is difficult to tell whether 2016 and 2017 are insights into an overall downward trend in Stage 3 diagnoses within Region 3.

**Table 32: Region 3 - Incidence Diagnosis Status (2013-2017)**

|             | Initial<br>HIV Only | Stage 3 Within<br>12 Months of Dx | Concurrent<br>HIV & Stage 3 | Total |
|-------------|---------------------|-----------------------------------|-----------------------------|-------|
| <b>2013</b> | 3                   | 0                                 | 2                           | 5     |
| <b>2014</b> | 6                   | 1                                 | 1                           | 8     |
| <b>2015</b> | 3                   | 2                                 | 0                           | 5     |
| <b>2016</b> | 2                   | 1                                 | 0                           | 3     |
| <b>2017</b> | 3                   | 0                                 | 0                           | 3     |

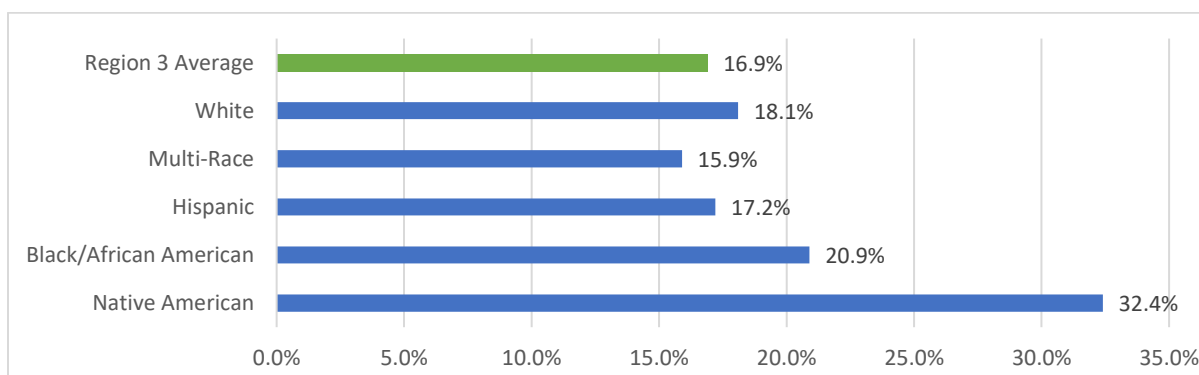
Due to low incidence numbers, the Linked to Care graphics in Figure 97 can fluctuate significantly if one patient is not linked to care. In 2016 and 2017, more than 85% of the prevalent HIV population saw a provider and more than 70% of HIV-positive persons in Region 3 were virally suppressed. These numbers exceed the national average. 2014 was the only year where less than 60% of the HIV population were virally suppressed.

**Figure 97: Region 3 - Continuum of Care (2013-2017)**

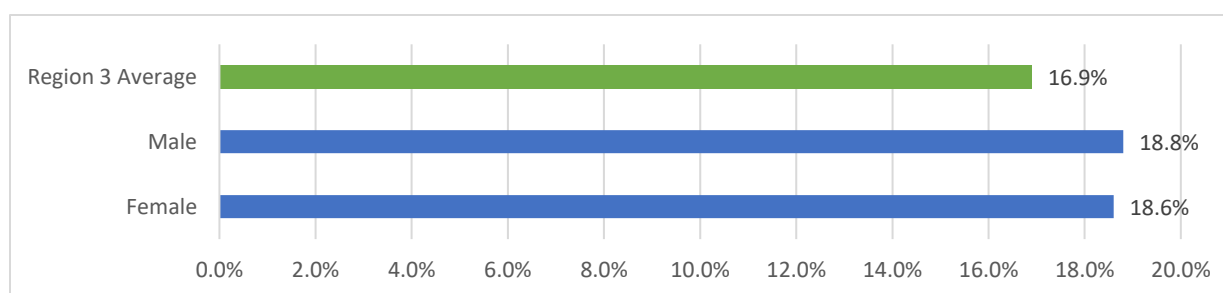


Aside from Multi-Race persons, all people living with HIV in Region 3 live with higher rates of poverty than the general population. Figure 98 shows that HIV-positive Native Americans are most affected by poverty within the region followed by Black/African American HIV-positive persons. The gender gap between HIV-positive males and females is minimal with a 0.2 point difference, as shown on Figure 99.

**Figure 98: Region 3 - Poverty Rates Among HIV-Positive Kansans vs. Region 3 General Population by Race/Ethnicity**

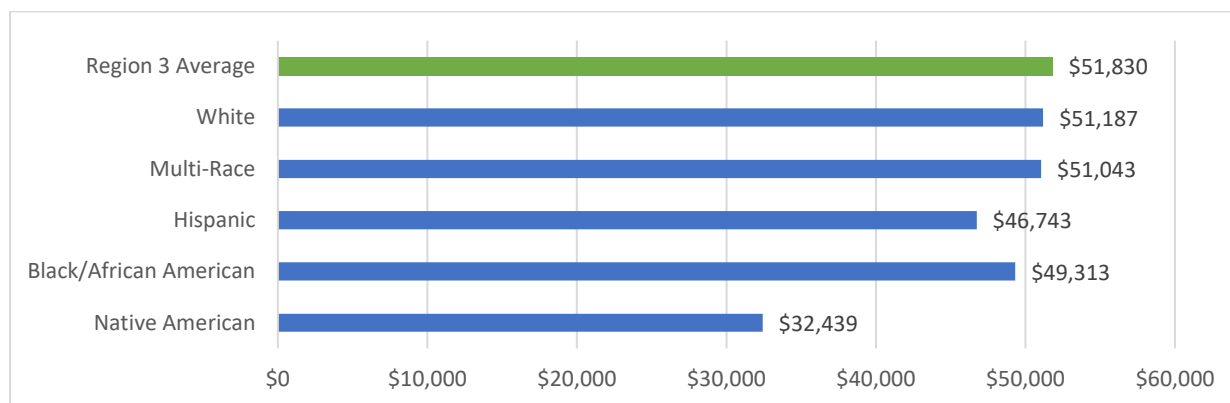


**Figure 99: Region 3 - Poverty Rates Among HIV-Positive Kansans by Sex at Birth**

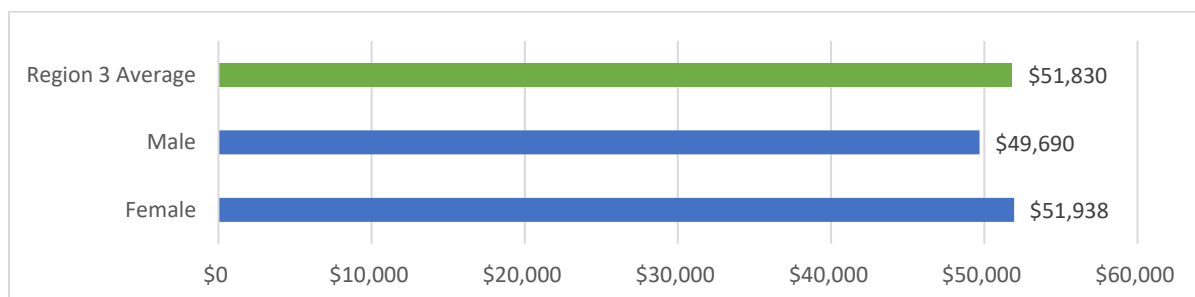


All HIV-positive persons living in Region 3 have a smaller median household income than the region’s general population. However, the White and Multi-Race HIV populations are only slightly less than the average. Native Americans living with HIV average close to \$19,000 less than the Region 3 general population, shown on Figure 100. HIV-positive Hispanics follow behind but have a median household income nearly \$14,000 higher than the HIV Native American population. In Region 3, HIV-positive males have a lower median household income than HIV-positive females (Figure 101).

**Figure 100: Region 3 - Median Household Income Among HIV-Positive Kansans vs. Region 3 General Population by Race/Ethnicity**

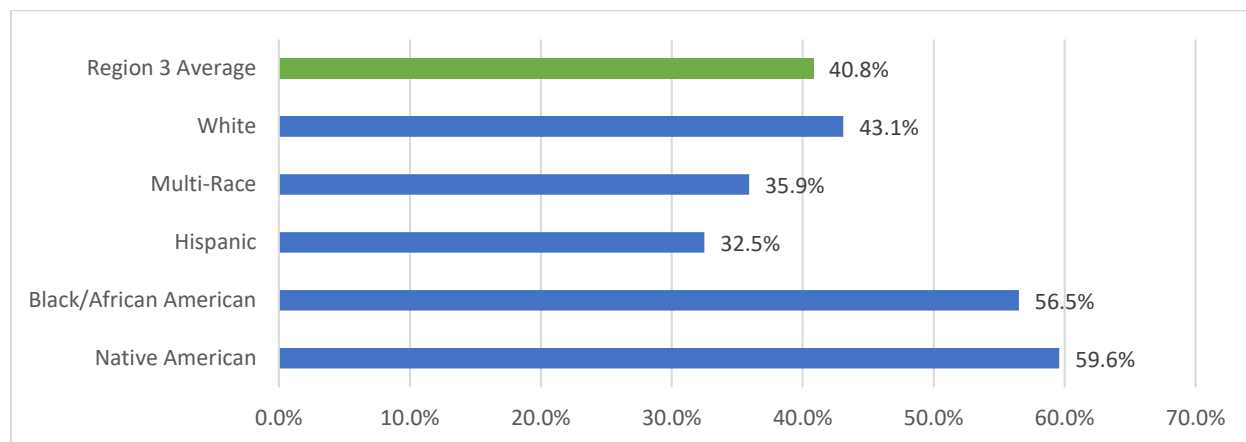


**Figure 101: Region 3 - Median Household Income Among HIV-Positive Kansans by Sex at Birth**

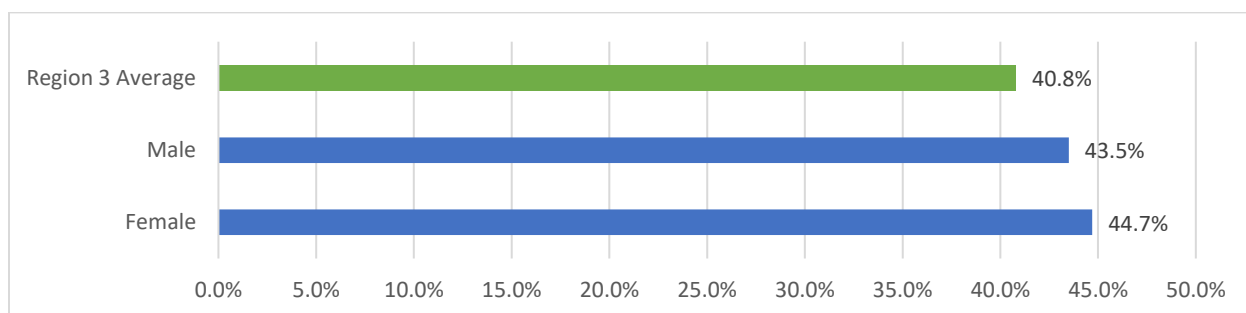


Despite living with higher rates of poverty, the HIV-positive Native American and Black/African American population in Region 3 are more likely to hold a bachelor’s degree than any other demographic, as seen on Figure 102. Only the Hispanic and Multi-Race HIV-positive populations are lower than the Region 3 general population’s average for obtaining a bachelor’s degree or higher. In Figure 103, HIV-positive males and females are more likely to have graduated with a bachelor’s degree than the area’s general population.

**Figure 102: Region 3 - HIV-Positive Kansans with a Bachelor's Degree  
vs. Region 3 General Population by Race/Ethnicity**



**Figure 103: Region 3 - HIV-Positive Kansans with a Bachelor's Degree by Sex at Birth**

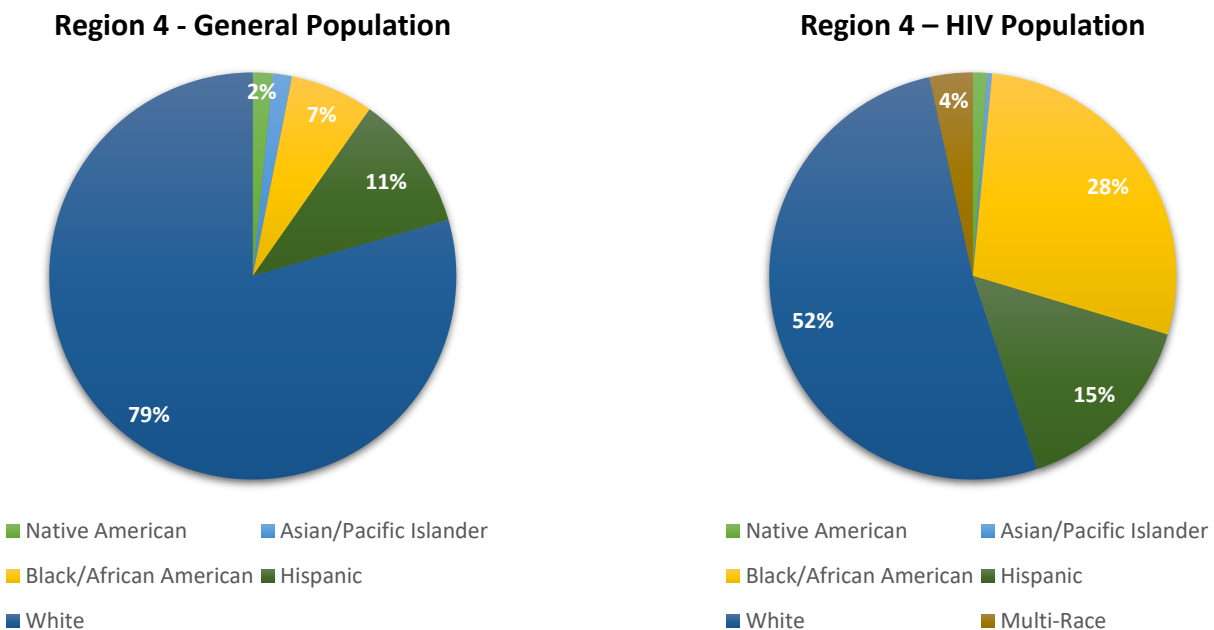


## Region 4 – Topeka

Region 4 is in the northeastern section of Kansas and consists of eleven counties: Atchison, Brown, Coffey, Doniphan, Jackson, Lyon, Morris, Nemaha, Osage, Shawnee, and Wabaunsee. Topeka (in Shawnee County) is the capitol city of Kansas. In 2017, the estimated population of Region 4 was 305,040. Region 4 consisted of 263 prevalent cases by December 31, 2017. 242 out of the 263 persons living with HIV in Region 4 were geocoded to analyze the social determinants of health.

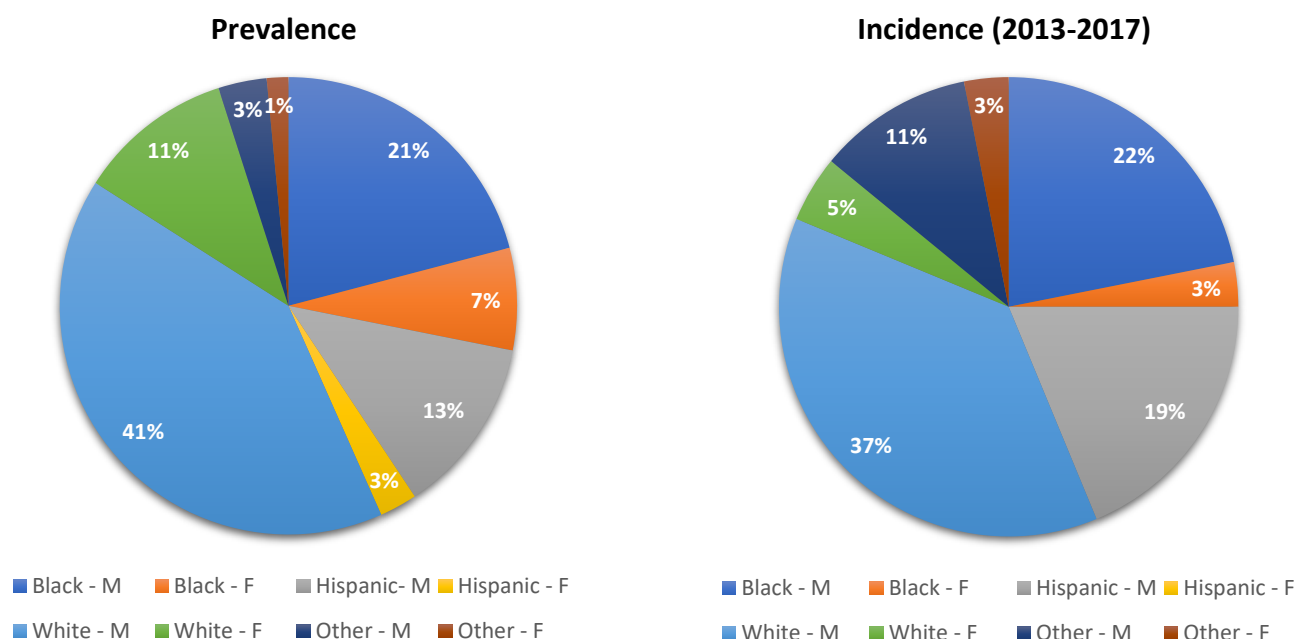
Figure 104 is a breakdown of the racial/ethnic demographics among Region 4's general population compared to its total HIV population. According to the graph, the Black/African American HIV population is disproportionately affected by HIV. While the region's Black/African American population makes up 7% of its total, the demographic makes up 28% of all HIV cases in Region 4.

**Figure 104: HIV Prevalence in Region 4 by Race/Ethnicity, 2017**



Between 2013 and 2017, 25% of all newly diagnosed HIV persons were Black/African American—a decline from the average of total prevalence (Figure 105). During the same period, Hispanic males made up 19% of all new cases, but only account for 13% of total prevalence in the region. In Region 4, the majority of new cases appear to be primarily made up by Hispanic males and males of other races (Asian, Native American, Multi-Race, and others). Several hypotheses emerge to explain why this may be the case, such as improved outreach efforts, an increasing Hispanic demographic, or greater stigma within the community for Hispanic MSMs that lead to higher risks of infection and late diagnoses.

**Figure 105: Region 4 - HIV Incidence and Prevalence by Race/Ethnicity and Sex at Birth, 2017**



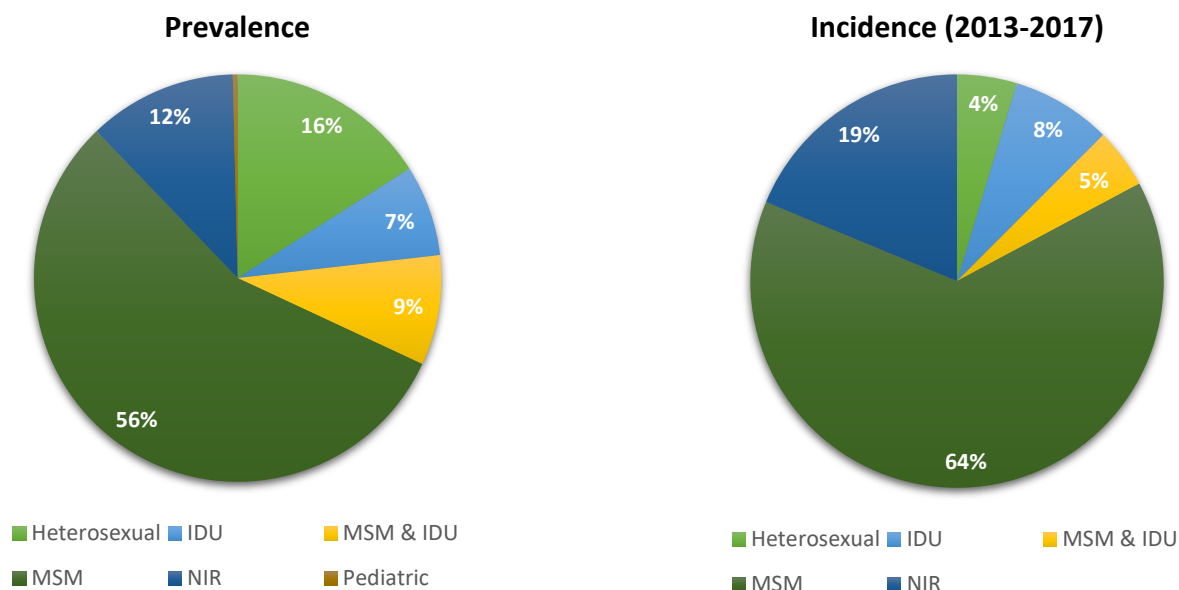
In Region 4, the majority of new diagnoses occur in people between the ages of 20 and 29 while the majority of people living with HIV are between 45 years of age and 59 years of age (Table 33). This is about average for the statewide totals mentioned in Section 2. The second most common age for diagnosis in Region 4 was between 40 and 49, with 17 total cases within the five-year period. 6 of these cases occurred in 2013 and 4 cases occurred in both 2015 and 2016.

**Table 33: Region 4 - HIV Prevalence (2017) and Incidence (2013-2017) by Age Group**

|                 | Prevalence | Incidence |
|-----------------|------------|-----------|
| <b>0 to 4</b>   | 0          | 0         |
| <b>5 to 9</b>   | 0          | 0         |
| <b>10 to 14</b> | 0          | 0         |
| <b>15 to 19</b> | 3          | 5         |
| <b>20 to 24</b> | 10         | 14        |
| <b>25 to 29</b> | 18         | 16        |
| <b>30 to 34</b> | 16         | 3         |
| <b>35 to 39</b> | 23         | 4         |
| <b>40 to 44</b> | 26         | 10        |
| <b>45 to 49</b> | 42         | 7         |
| <b>50 to 54</b> | 46         | 1         |
| <b>55 to 59</b> | 40         | 4         |
| <b>60 to 64</b> | 18         | 0         |
| <b>65+</b>      | 21         | 0         |

Figure 106 shows most HIV diagnoses occur among MSM. 64% of persons diagnosed with HIV in Region 4 between 2013 and 2017 were MSM while this demographic makes up 56% of the total HIV population. There is a significant decline in high risk heterosexual transmission while the NIR category is 7 points higher among incidence than prevalence. Therefore, it is likely that heterosexual transmission is less common than it was previously or that individuals with high risk heterosexual contact are testing for HIV less frequently.

**Figure 106: Region 4 - HIV Incidence and Prevalence by Exposure Category, 2017**



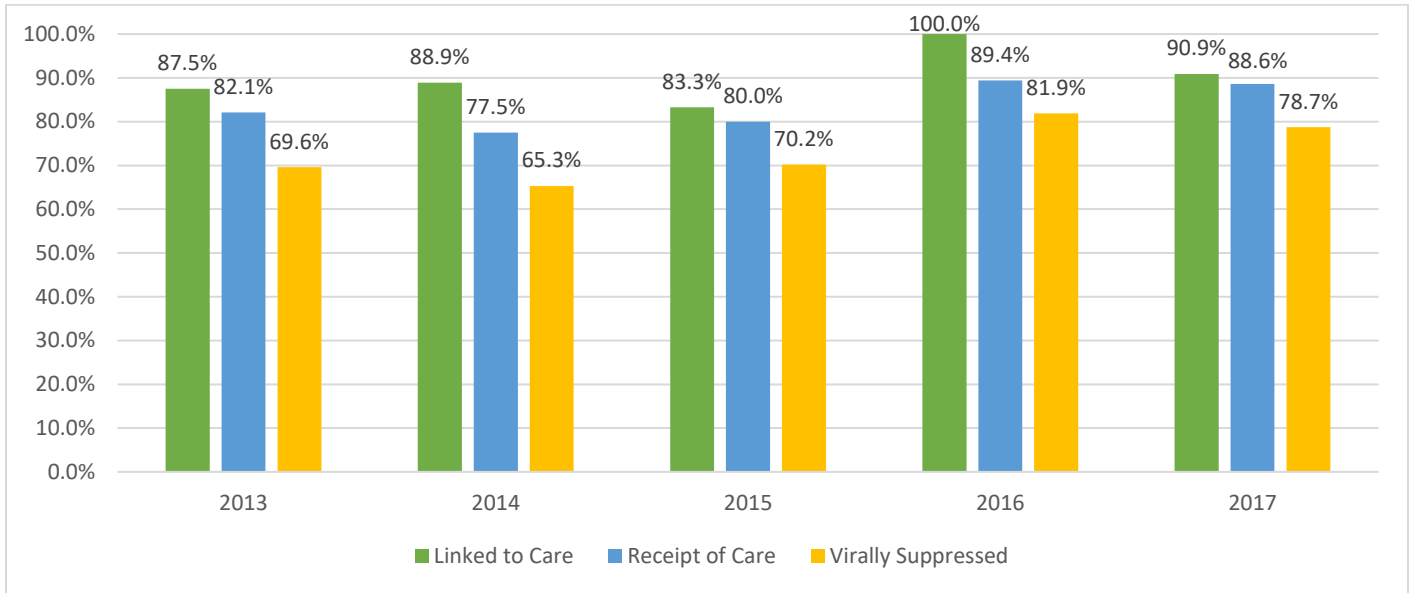
29.7% of people newly diagnosed with HIV in Region 4 between 2013 and 2017 were diagnosed as Stage 3 concurrently or within a year. Table 34 shows that within the last two years, Stage 3 diagnoses are happening less than average. In 2013, 37.5% of newly diagnosed HIV patients were classified as Stage 3 sometime within one year.

**Table 34: Region 4 - Incidence Diagnosis Status (2013-2017)**

|             | Initial HIV Only | Stage 3 Within 12 Months of Dx | Concurrent HIV & Stage 3 | Total |
|-------------|------------------|--------------------------------|--------------------------|-------|
| <b>2013</b> | 10               | 2                              | 4                        | 16    |
| <b>2014</b> | 13               | 3                              | 2                        | 18    |
| <b>2015</b> | 7                | 1                              | 4                        | 12    |
| <b>2016</b> | 7                | 0                              | 0                        | 7     |
| <b>2017</b> | 8                | 2                              | 1                        | 11    |

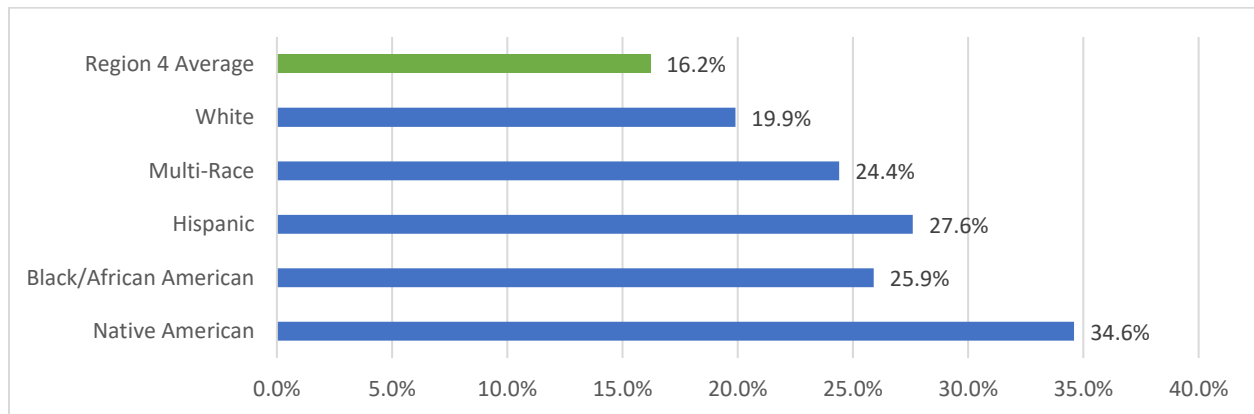
Overall, Region 4 sees high rates of newly diagnosed patients being linked to care within one month of diagnosis, as seen in Figure 107. At the end of 2017, it is estimated that 78.7% of patients in the region were virally suppressed while 88.6% of the HIV population saw a healthcare provider during the year.

**Figure 107: Region 4 - Continuum of Care (2013-2017)**

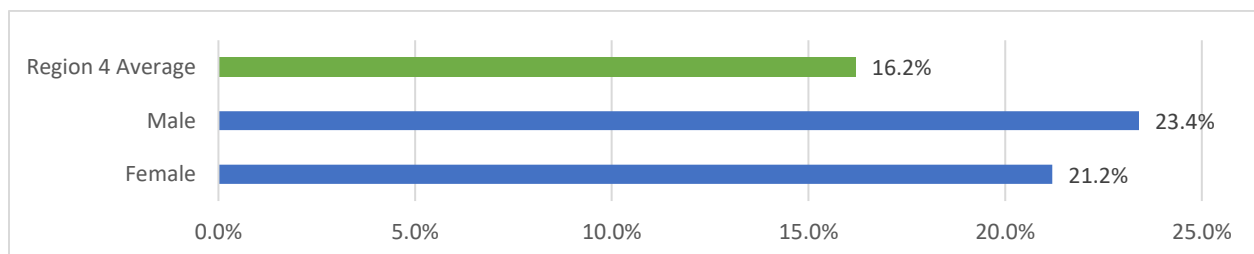


16.2% of Region 4’s general population live below the federal poverty level (Figure 108). Among PLWH in Region 4, all demographics among HIV-positive persons live with significantly higher rates of poverty than region’s total average. More than 25% of Hispanic, Black/African American, and Native American HIV-positive people live below the federal poverty line threshold. As illustrated in Figure 109, HIV-positive males are more likely to be living in poverty than HIV-positive females, but both totals are at least 6 points higher than the regional average.

**Figure 108: Region 4 - Poverty Rates Among HIV-Positive Kansans vs. Region 4 General Population by Race/Ethnicity**



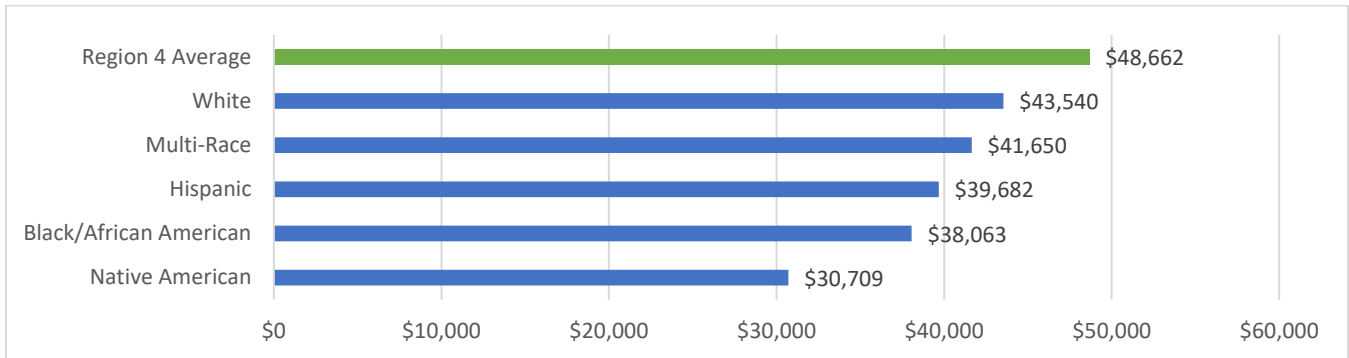
**Figure 109: Region 4 - Poverty Rates Among HIV-Positive Kansans by Sex at Birth**



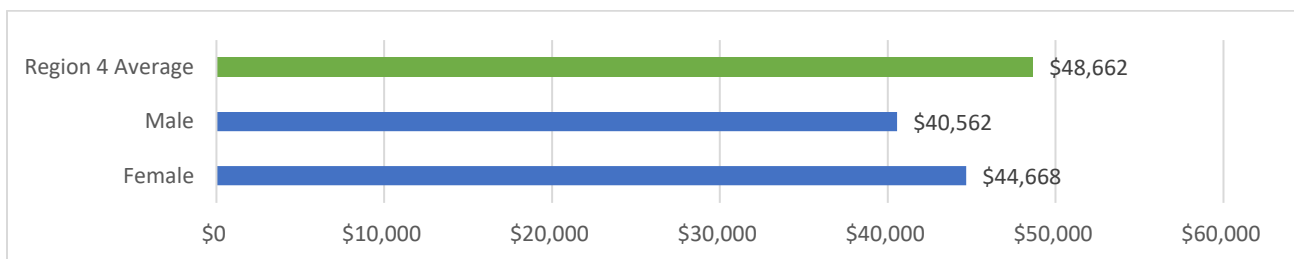
*The Mission of the STI/HIV Section is to stop the spread of STIs & HIV in Kansas*

In Figure 110 and Figure 111, all demographics among PLWH have lower median household incomes than Region 4's general population average. Black/African American and Native American HIV-positive persons have median household incomes at least \$10,000 less than the region's average. In Figure 111, HIV-positive males are estimated to have lower median household incomes than HIV-positive females.

**Figure 110: Region 4 - Median Household Income Among HIV-Positive Kansans vs. Region 4 General Population by Race/Ethnicity**

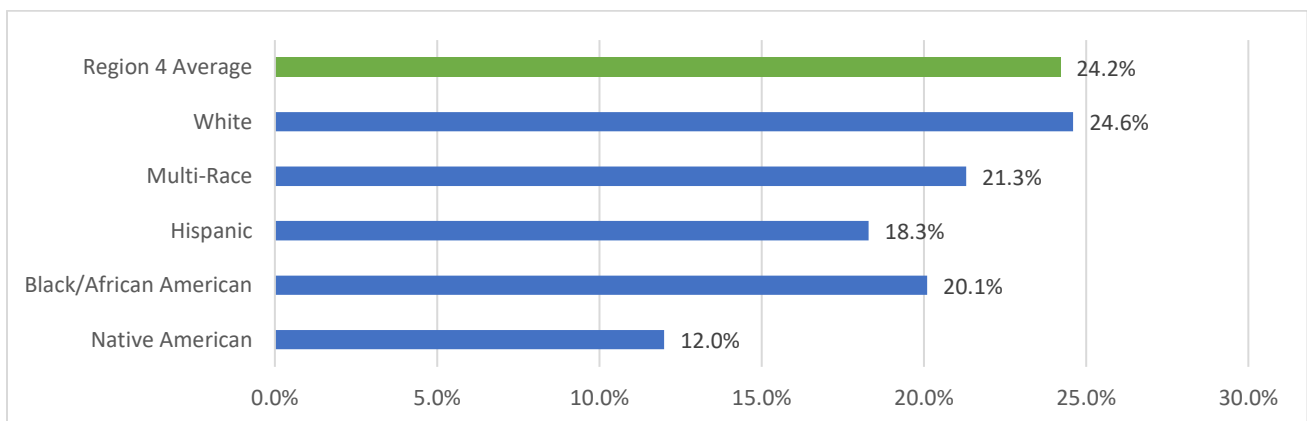


**Figure 111: Region 4 - Median Household Income Among HIV-Positive Kansans by Sex at Birth**

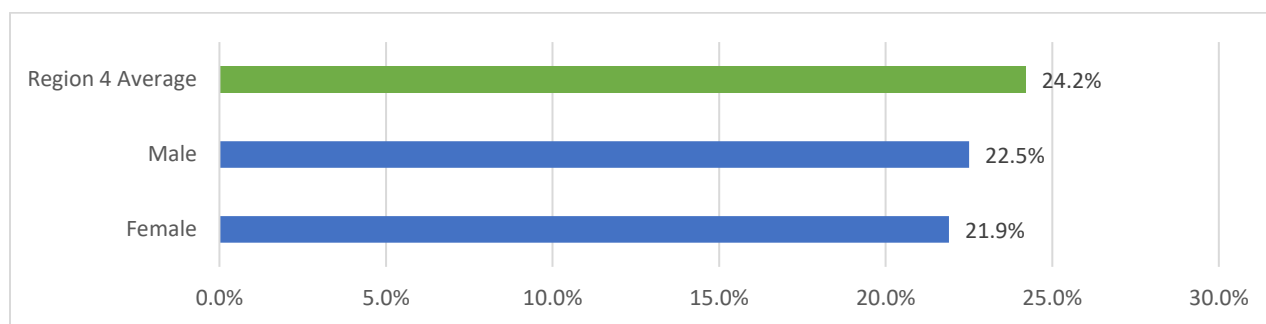


In Figure 112, White HIV-positive persons are estimated to slightly have higher rates of obtaining a bachelor's degree than the general population of Region 4. HIV-positive Native Americans are far less likely to have a bachelor's degree. Native American and Hispanic HIV populations have the lowest estimated number of people with a bachelor's degree. In Figure 113, HIV-positive males are slightly more likely to have a bachelor's degree.

**Figure 112: Region 4 - HIV-Positive Kansans with a Bachelor's Degree vs. Region 4 General Population by Race/Ethnicity**



**Figure 113: Region 4 - HIV-Positive Kansans with a Bachelor's Degree by Sex at Birth**

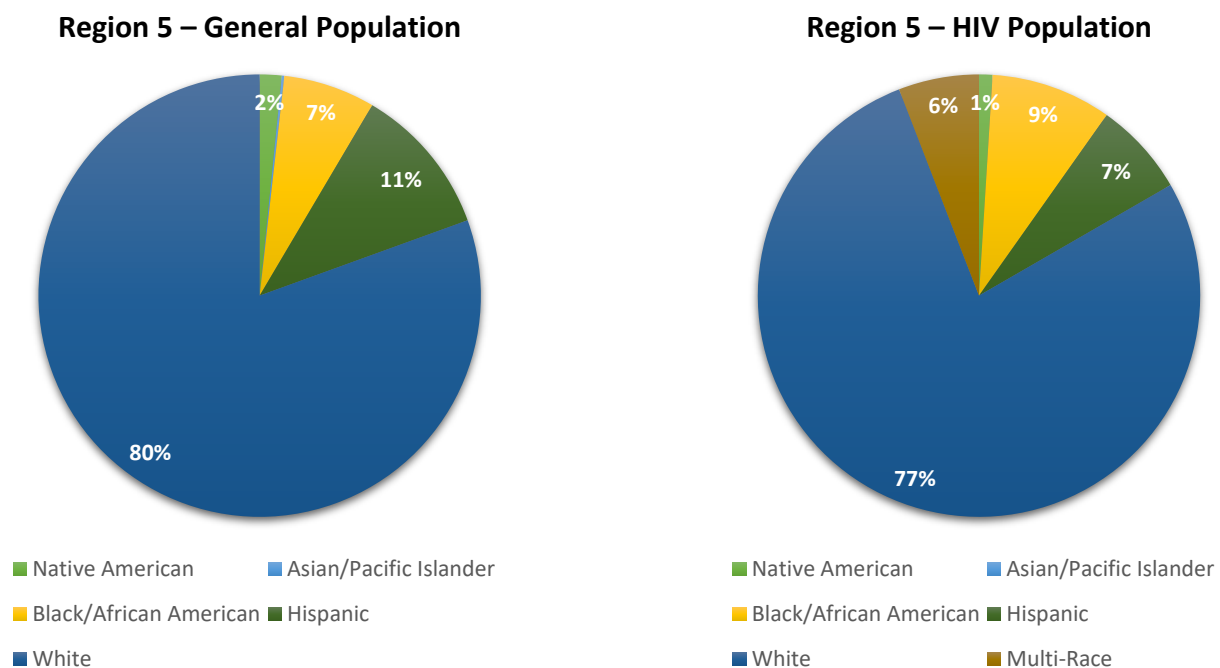


## Region 5 – Pittsburg

Region 5 is in southeastern Kansas and consists of eleven counties: Allen, Anderson, Bourbon, Cherokee, Crawford, Labette, Linn, Montgomery, Neosho, Wilson, and Woodson. This region borders both Oklahoma and Missouri. Pittsburg (Crawford County) is home to Pittsburg State University. In 2017, the estimated population of Region 5 was 184,519. Region 5 is the small populated region in Kansas. Region 5 consists of 102 prevalent cases as of December 31, 2017. Of the total prevalent HIV population, 83 people were geocoded to analyze the social determinants of health.

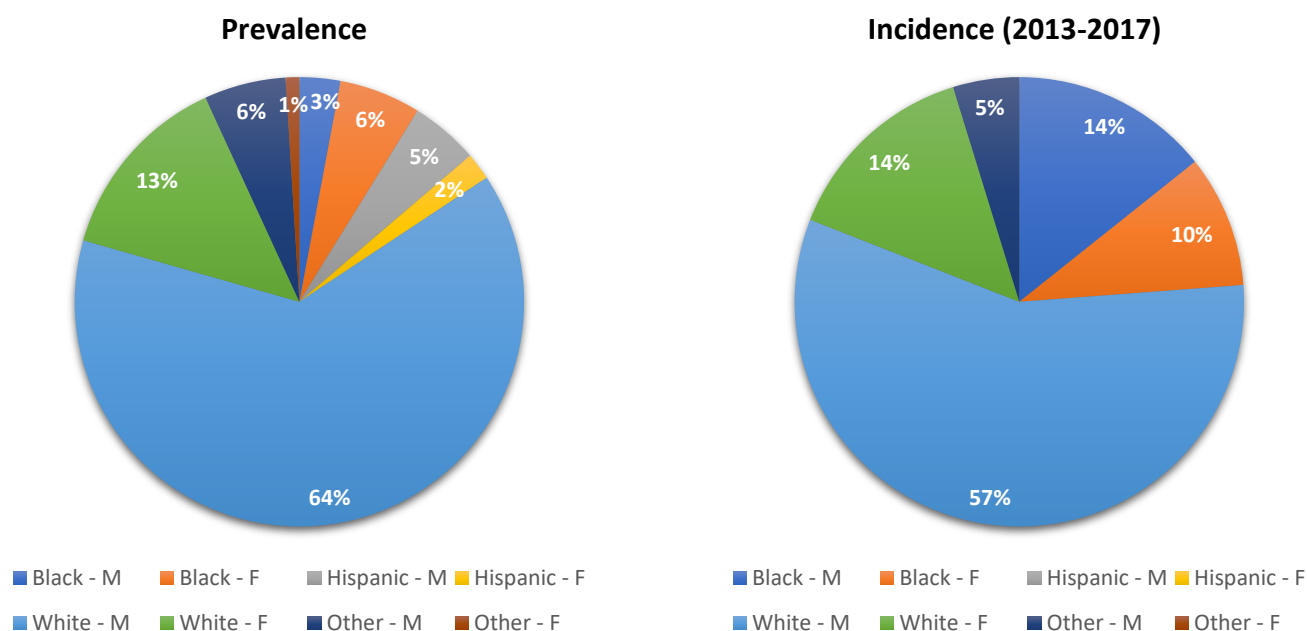
Figure 114 illustrates that the racial/ethnic demographics of the prevalent HIV-population is similar to that of the general population in Region 5. While 80% of the general population is White, 77% of the HIV-positive population is also White.

**Figure 114: HIV Prevalence in Region 5 by Race/Ethnicity, 2017**



While Figure 114 shows the total HIV population is similar to the general population, Figure 115 shows that is not necessarily the case with newly diagnosed people between 2013 and 2017. In this five-year period, 24% of all new cases were among the Black/African American population. Black/African American HIV-positive females comprise 6% of total prevalence compared to 3% for Black/African American HIV-positive males.

**Figure 115: Region 5 - HIV Incidence and Prevalence by Race/Ethnicity and Sex at Birth, 2017**



With such a small sample size, newly diagnosed persons in Region 5 by age group are disperse. As seen on Table 35, 10 people newly diagnosed with HIV between 2013 and 2017 were between the ages of 20 and 24 while 8 people were between the ages of 40 and 54. The dispersed diagnoses among age group may be due to the differences in transmission/exposure where the older population may have been more likely to contract the virus from IDU and the younger population from MSM contact.

**Table 35: Region 5 - HIV Prevalence (2017) and Incidence (2013-2017) by Age Group**

|                 | Prevalence | Incidence |
|-----------------|------------|-----------|
| <b>0 to 4</b>   | 0          | 0         |
| <b>5 to 9</b>   | 1          | 0         |
| <b>10 to 14</b> | 2          | 0         |
| <b>15 to 19</b> | 0          | 1         |
| <b>20 to 24</b> | 6          | 4         |
| <b>25 to 29</b> | 1          | 2         |
| <b>30 to 34</b> | 6          | 4         |
| <b>35 to 39</b> | 9          | 1         |
| <b>40 to 44</b> | 12         | 3         |
| <b>45 to 49</b> | 21         | 3         |
| <b>50 to 54</b> | 14         | 2         |
| <b>55 to 59</b> | 13         | 1         |
| <b>60 to 64</b> | 8          | 0         |
| <b>65+</b>      | 9          | 0         |

As shown in Figure 116, Region 5 has the highest rates of HIV transmission by IDU. While IDU makes up 25% of the prevalent population, it makes up 29% of all newly diagnosed cases between 2013 and 2017. There was a total of 21 new HIV cases within the five-year period, so one individual consists of several percentage points on the incidence graph below.

**Figure 116: Region 5 - HIV Incidence and Prevalence by Exposure Category, 2017**

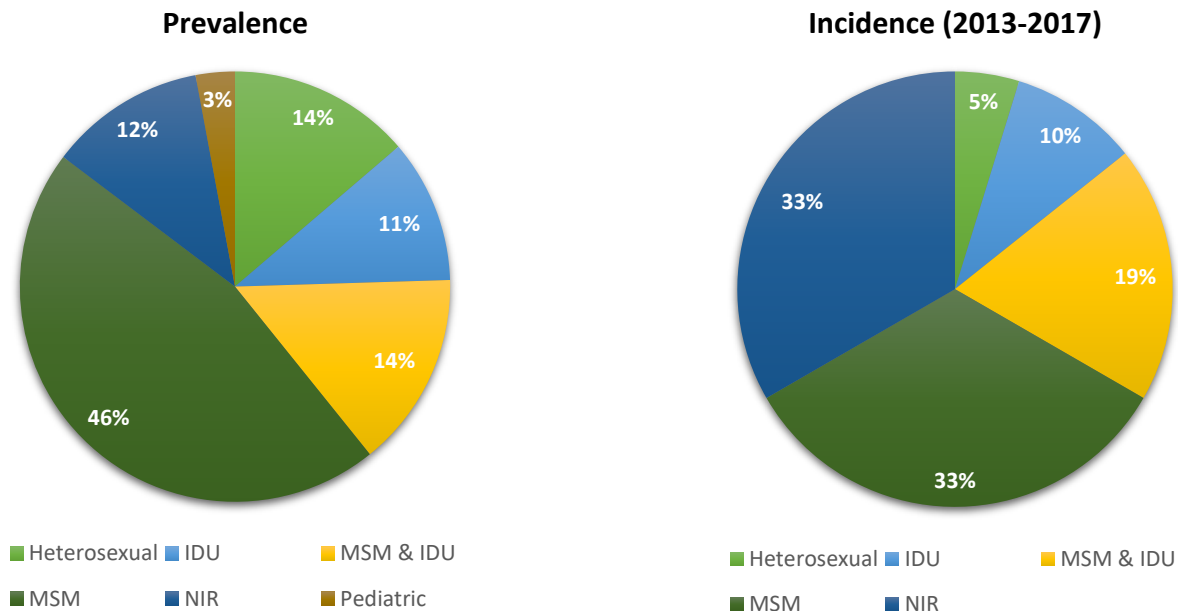


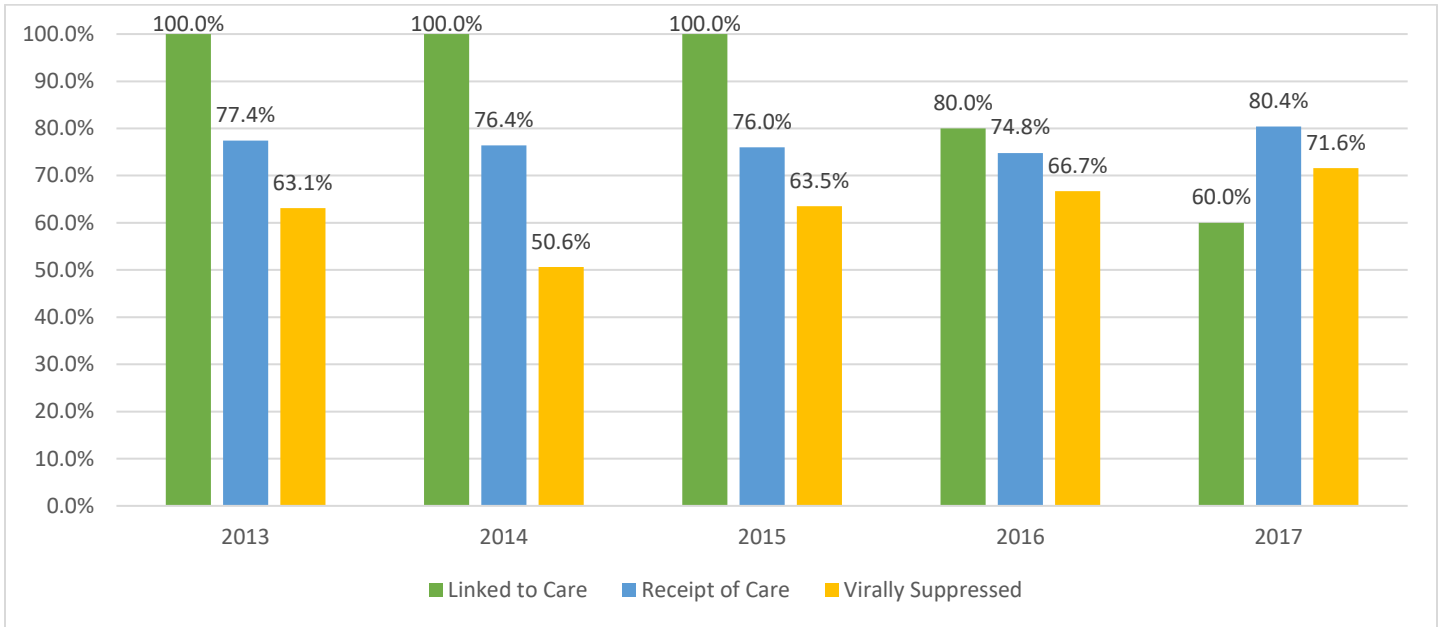
Table 36 shows that 38.1% of newly diagnosed HIV-positive persons were also diagnosed as Stage 3 concurrently or within on year. This is higher than the statewide average among newly diagnosed persons. A couple of possibilities as to why may be due to struggles in getting the IDU population to engage in routine HIV testing or lack of knowledge about where to seek out testing and how often in rural areas.

**Table 36: Region 5 - Incidence Diagnosis Status (2013-2017)**

|             | Initial HIV Only | Stage 3 Within 12 Months of Dx | Concurrent HIV & Stage 3 | Total |
|-------------|------------------|--------------------------------|--------------------------|-------|
| <b>2013</b> | 2                | 1                              | 1                        | 4     |
| <b>2014</b> | 1                | 0                              | 2                        | 3     |
| <b>2015</b> | 3                | 1                              | 0                        | 4     |
| <b>2016</b> | 3                | 1                              | 1                        | 5     |
| <b>2017</b> | 4                | 1                              | 0                        | 5     |

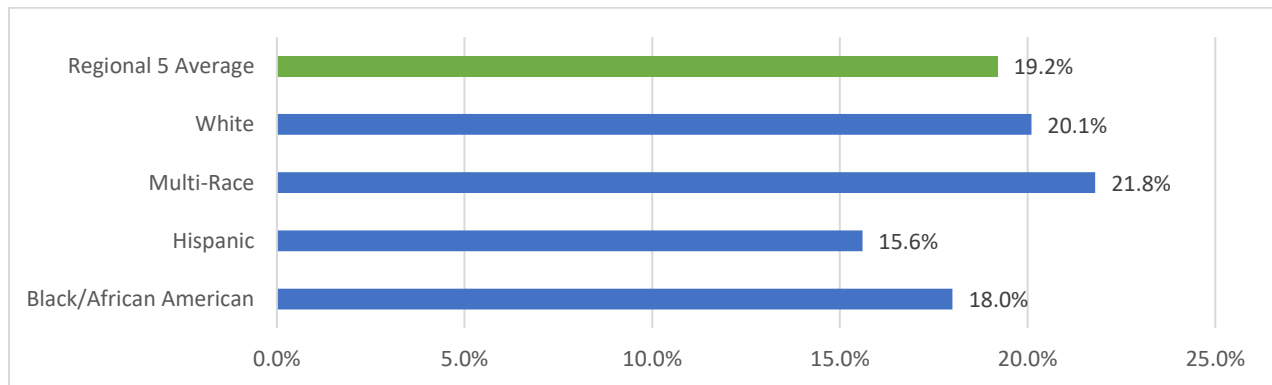
In the last two years, 3 out of the 10 newly diagnosed HIV-positive patients were not linked to care within one month of diagnosis. By the end of 2017, nearly 72% of HIV-positive patients in Region 5 achieved viral suppression while 80.4% saw a healthcare provider within the year (Figure 117).

**Figure 117: Region 5 - Continuum of Care (2013-2017)**



Region 5's general population have higher rates of people living in poverty than regions 1-4. Unlike previously discussed regions, the White and Multi-Race HIV populations are more likely to be living in poverty than the Hispanic or Black/African American HIV populations (Figure 118). HIV-positive males are also more likely than HIV-positive females to be living in poverty, as shown in Figure 119.

**Figure 118: Region 5 - Poverty Rates Among HIV-Positive Kansans vs. Region 5 General Population by Race/Ethnicity**



**Figure 119: Region 5 - Poverty Rates Among HIV-Positive Kansans by Sex at Birth**

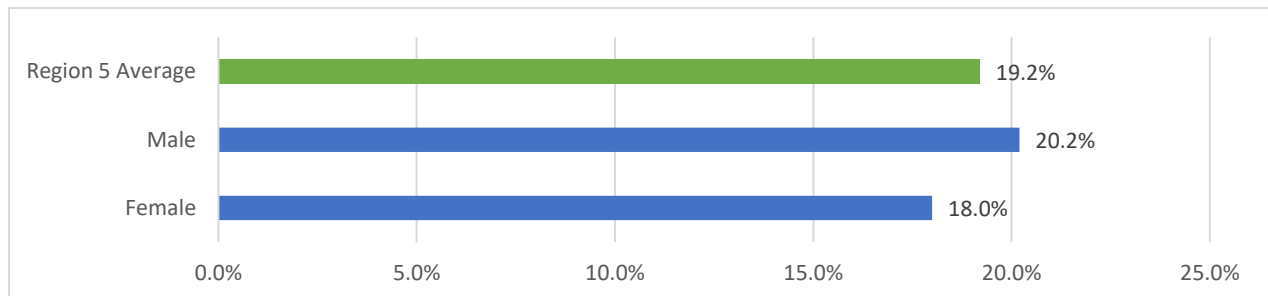
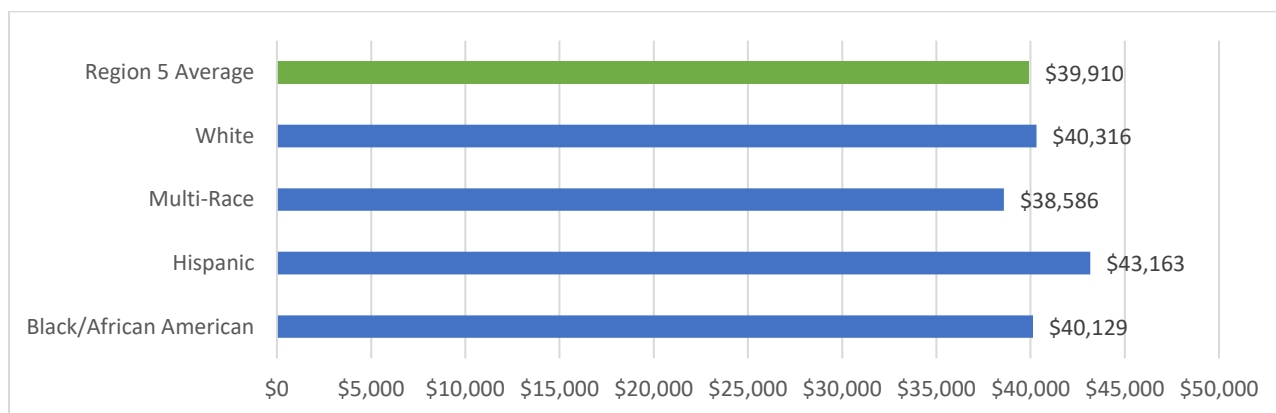
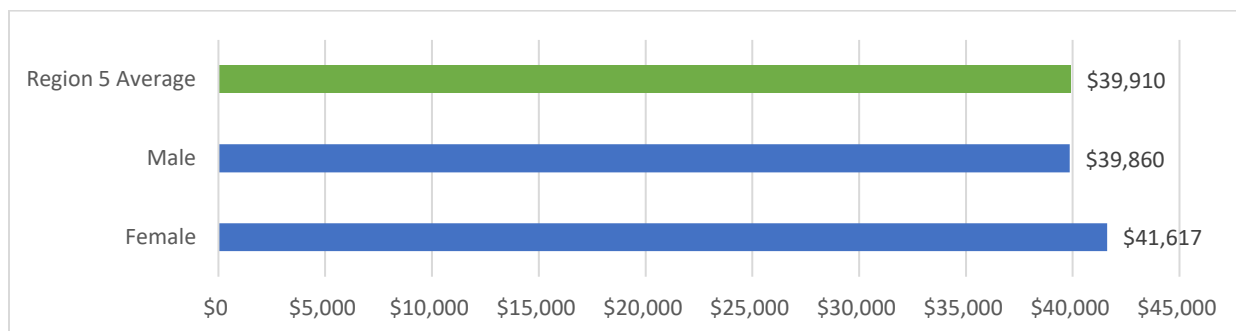


Figure 120 illustrates that only Multi-Race HIV-positive persons are estimated to have a lower median household income than the region's average among the general population. While the Black/African American HIV population was less likely to be living in poverty, they are estimated to have a slightly lower median household income than the White HIV population. HIV-positive Hispanics have the highest median household income among the demographics listed in Figure 120. HIV-positive females, shown in Figure 121, are more likely to have a higher median household income than HIV-positive males and the region's average for the general population.

**Figure 120: Region 5 - Median Household Income Among HIV-Positive Kansans vs. Region 5 General Population by Race/Ethnicity**



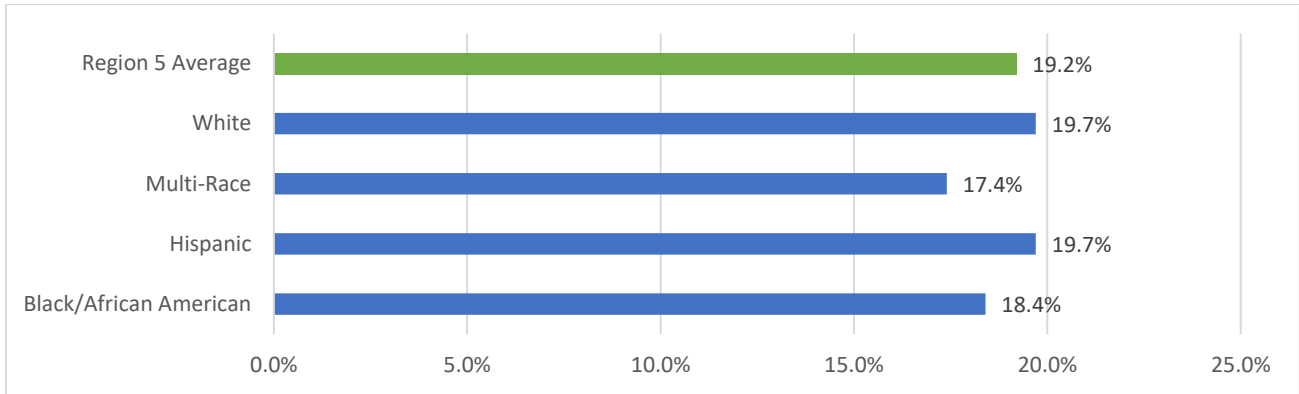
**Figure 121: Region 5 - Median Household Income Among HIV-Positive Kansans by Sex at Birth**



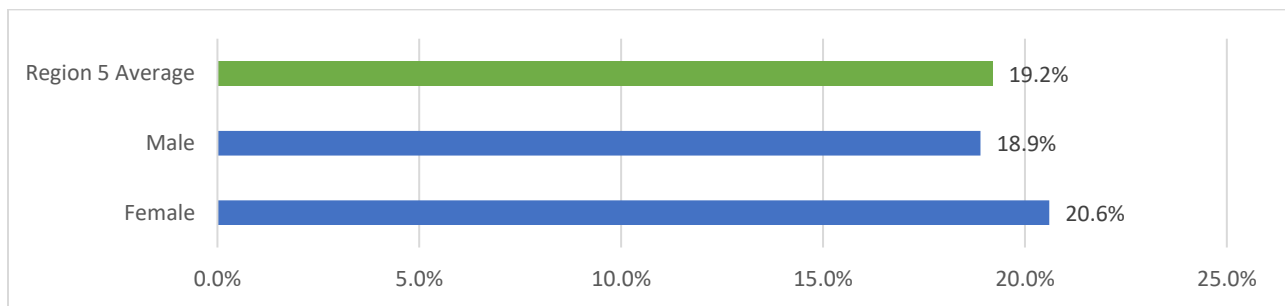
As seen in Figure 122, the White and Hispanic HIV populations have equivalent estimated rates of holding a bachelor's degree or higher and is slightly higher than the general population's average. Black/African American and Multi-Race HIV-positive persons are below the general population's average in this category.

Overall, the social determinants of health analyzed in Region 5 are quite complex with no clear pattern. Given the high portion of HIV prevalence among IDUs, the social determinants of health in this region would likely benefit more from a breakdown between transmission/risk categories rather than racial/ethnic and sex at birth demographics.

**Figure 122: Region 5 - HIV-Positive Kansans with a Bachelor's Degree  
vs. Region 5 General Population by Race/Ethnicity**



**Figure 123: Region 5 - HIV-Positive Kansans with a Bachelor's Degree by Sex at Birth**

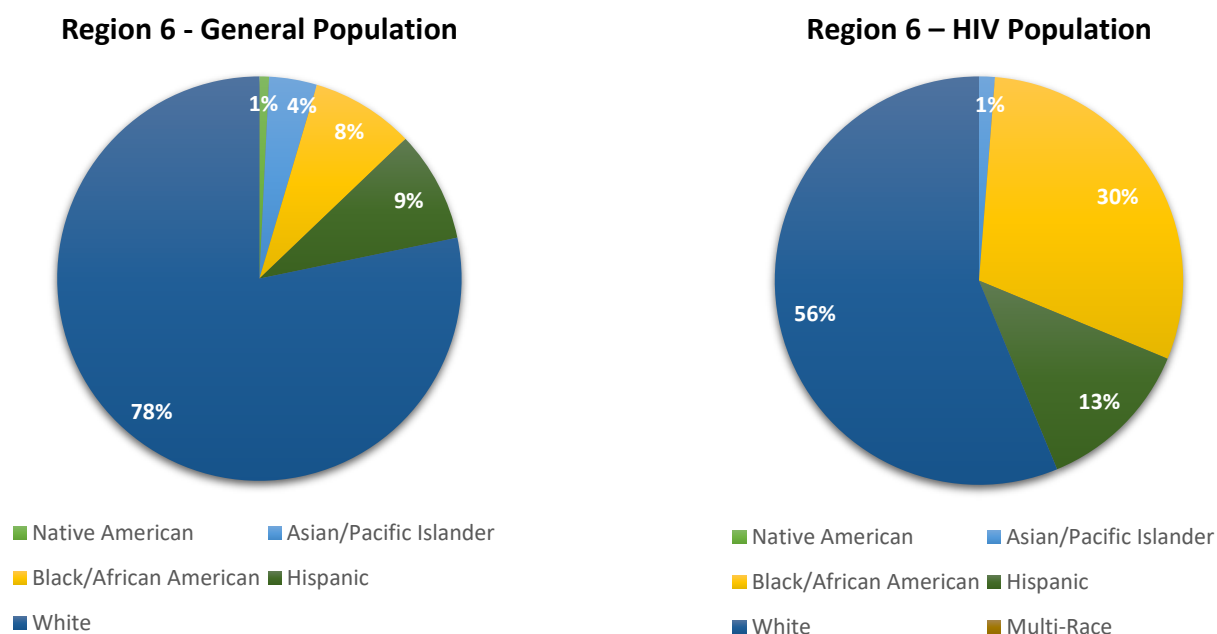


## Region 6 – Manhattan

Region 6 is in the north central portion of Kansas and consists of six counties: Clay, Geary, Marshall, Pottawatomie, Riley, and Washington. This area includes a major military base (Fort Riley) and the main campus of Kansas State University. In 2017, the estimated population of Region 6 was 155,123. Region 6 consisted of 80 prevalent cases by December 31, 2017. Of these prevalent cases, 70 were geocoded to analyze the social determinants of health.

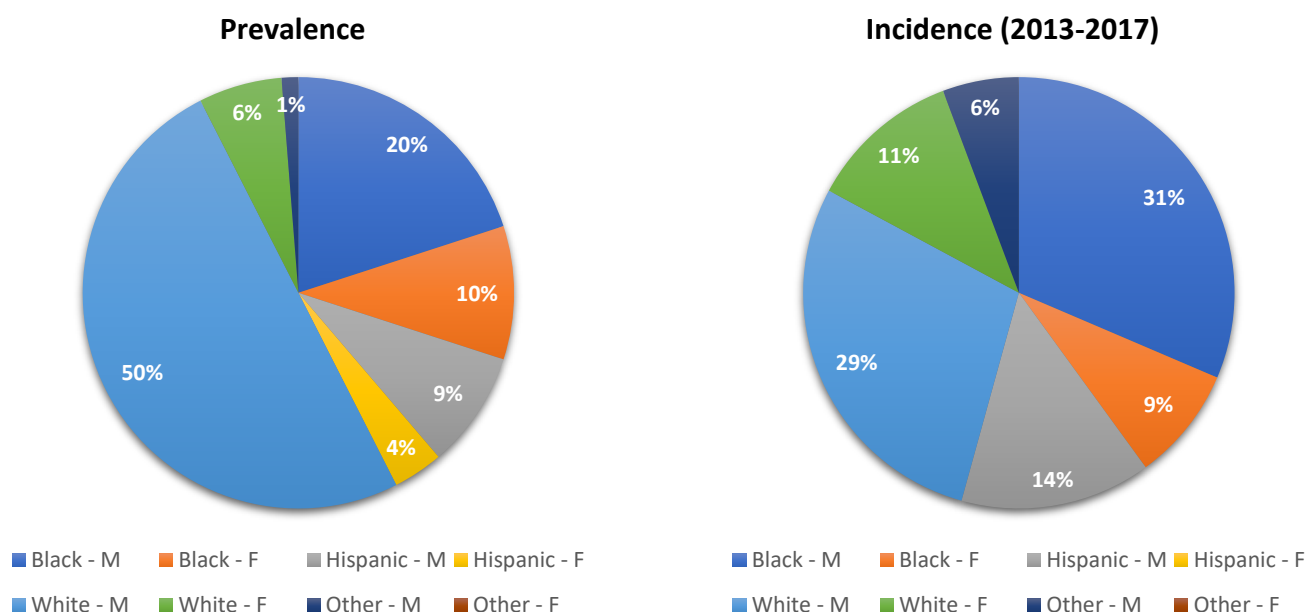
Figure 124 shows that the HIV epidemic disproportionately affects the Black/African American population, with the demographic making up 30% of prevalence but only 8% of Region 8's general population. The proportion of HIV-positive Hispanics in the region are slightly higher than the proportion of Hispanics in the region's general population.

**Figure 124: HIV Prevalence in Region 6 by Race/Ethnicity, 2017**



Between 2013 and 2017, 49% of newly diagnosed cases occurred within the Black/African American community and primarily affected Black/African American males. As seen on Figure 125, new HIV cases among the White population is equivalent to the Black/African American population with the five-year period. The proportion of newly diagnosed Hispanic males is also higher than the total proportion of prevalent HIV-positive Hispanic males living in Region 5.

**Figure 125: Region 6 - HIV Incidence and Prevalence by Race/Ethnicity and Sex at Birth, 2017**



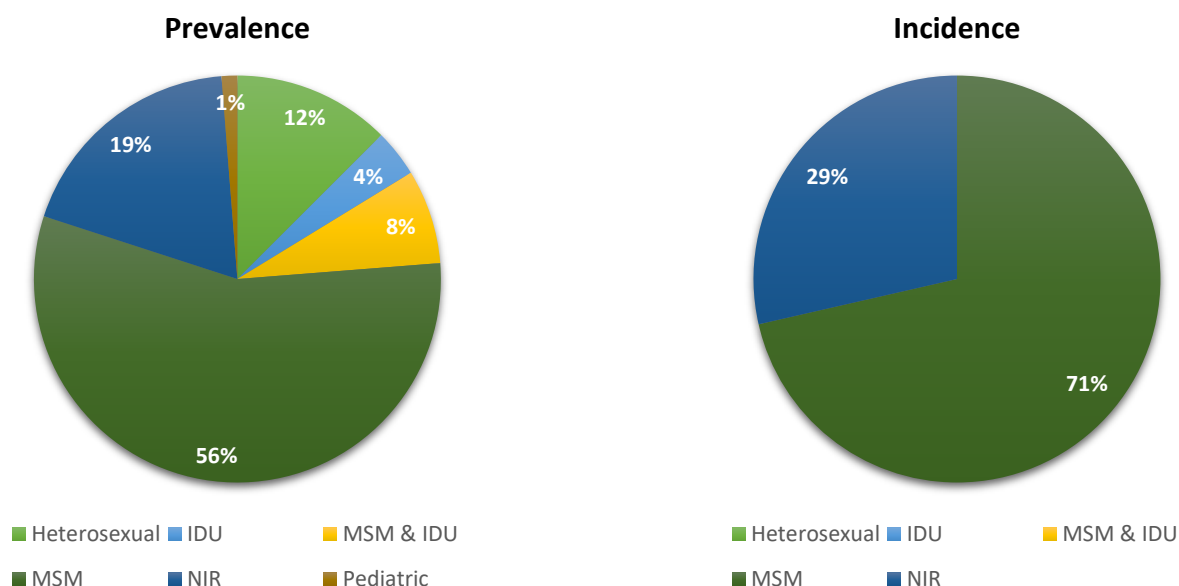
As shown on Table 37, more than half of all new HIV-positive persons in Region 5 were between the age of 20 and 29. In 2016 and 2017, there were 2 cases of HIV in each year among this age group. The prevalent population is more dispersed among age. 31 people living with HIV in the region are between the age of 20 and 39 and 37 people are between the age of 45 and 64.

**Table 37: Region 6 - HIV Prevalence (2017) and Incidence (2013-2017) by Age Group**

|                 | Prevalence | Incidence |
|-----------------|------------|-----------|
| <b>0 to 4</b>   | 0          | 0         |
| <b>5 to 9</b>   | 0          | 0         |
| <b>10 to 14</b> | 0          | 0         |
| <b>15 to 19</b> | 2          | 4         |
| <b>20 to 24</b> | 7          | 12        |
| <b>25 to 29</b> | 8          | 6         |
| <b>30 to 34</b> | 8          | 5         |
| <b>35 to 39</b> | 8          | 2         |
| <b>40 to 44</b> | 4          | 0         |
| <b>45 to 49</b> | 8          | 1         |
| <b>50 to 54</b> | 9          | 3         |
| <b>55 to 59</b> | 11         | 2         |
| <b>60 to 64</b> | 9          | 0         |
| <b>65+</b>      | 6          | 0         |

Figure 126 shows that all newly diagnosed HIV-positive persons between 2013 and 2017 with a documented risk factor are MSM. 71% of newly diagnosed persons are MSM compared to 56% of the total prevalent population. There are 80 persons presented in the left pie chart compared to 35 in the right pie chart.

**Figure 126: Region 6 - HIV Incidence and Prevalence by Exposure Category, 2017**



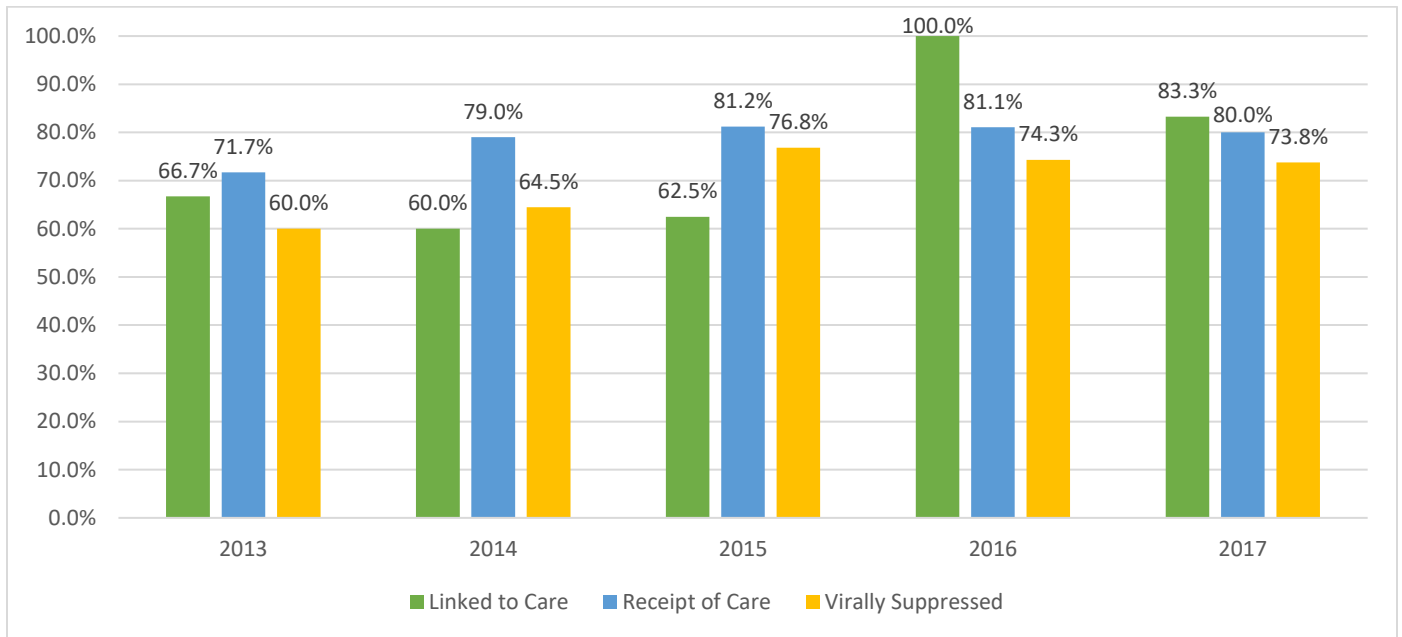
Apart from 2013, Table 38 shows that the majority of newly diagnosed HIV-positive persons are diagnosed only with HIV. Between 2014 and 2017, 15.4% of newly diagnosed persons were diagnosed as Stage 3 concurrently or within one year, which is significantly lower than the statewide average.

**Table 38: Region 6 - Incidence Diagnosis Status (2013-2017)**

|             | Initial HIV Only | Stage 3 Within 12 Months of Dx | Concurrent HIV & Stage 3 | Total |
|-------------|------------------|--------------------------------|--------------------------|-------|
| <b>2013</b> | 3                | 2                              | 4                        | 9     |
| <b>2014</b> | 3                | 0                              | 2                        | 5     |
| <b>2015</b> | 7                | 1                              | 0                        | 8     |
| <b>2016</b> | 6                | 1                              | 0                        | 7     |
| <b>2017</b> | 6                | 0                              | 0                        | 6     |

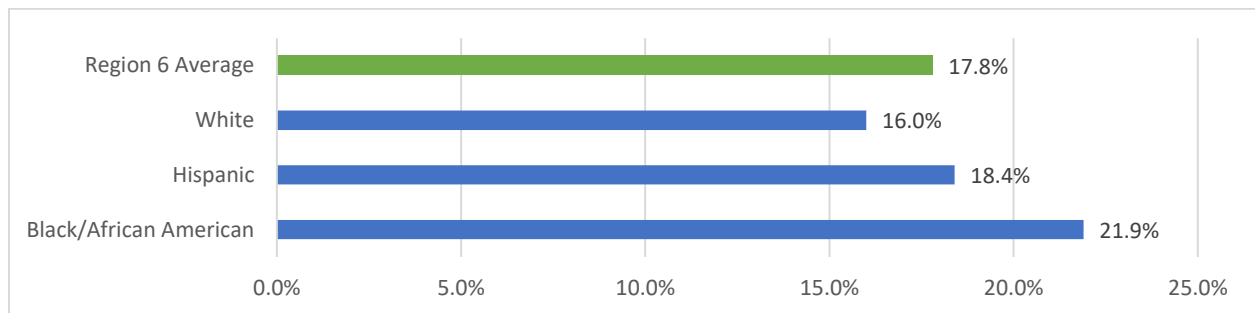
Figure 127 shows improved numbers in linking newly diagnosed patients into medical care within one month of diagnosis. By the end of 2017, 73.8% of HIV-positive persons living in Region 6 were virally suppressed while 80% saw a medical provider within that year. These two measures are lower in 2017 than the previous two years.

**Figure 127: Region 6 - Continuum of Care (2013-2017)**

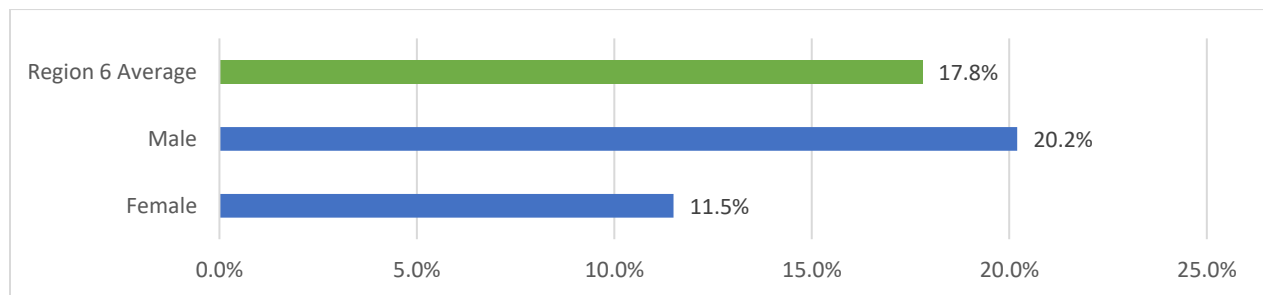


In Region 6, Hispanic and Black/African American persons living with HIV are more likely to be living in poverty than the general population. The gap between HIV-positive males and HIV-positive females shown in Figure 129 is substantial. HIV-positive males are nearly twice as likely to be living in poverty than females with HIV.

**Figure 128: Region 6 - Poverty Rates Among HIV-Positive Kansans vs. Region 6 General Population by Race/Ethnicity**

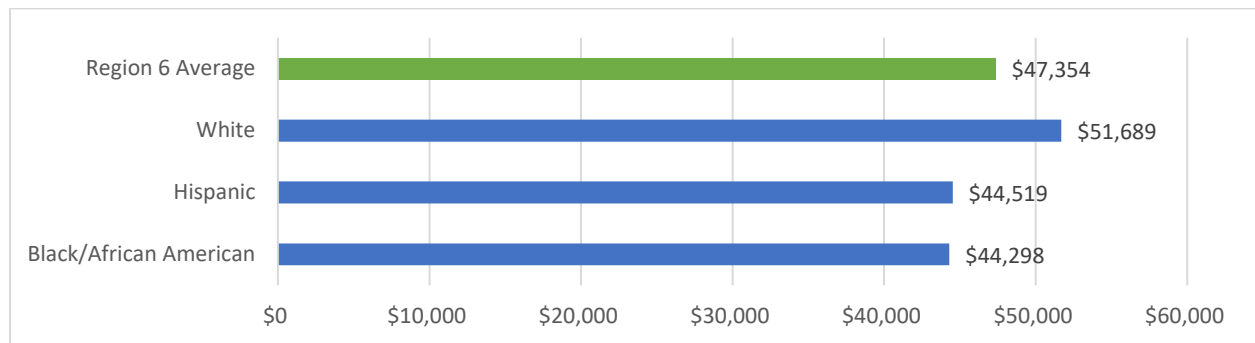


**Figure 129: Region 6 - Poverty Rates Among HIV-Positive Kansans by Sex at Birth**

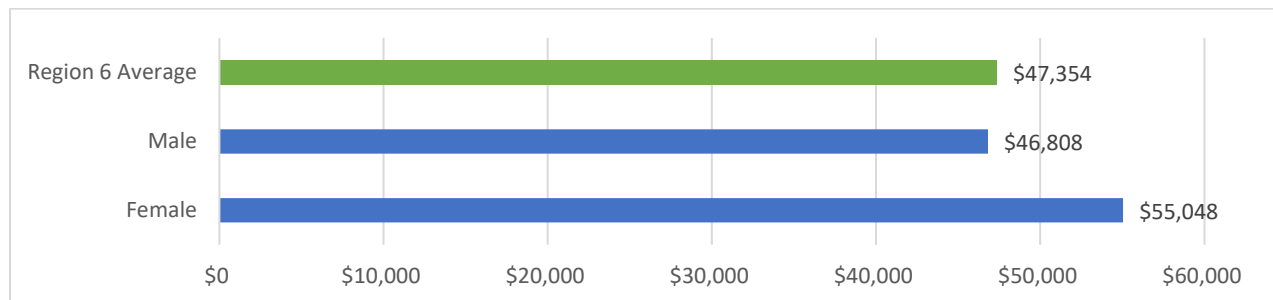


Median household income disparities in Region 6 are minimal between the general population and the HIV-positive population, shown in Figure 130. While White HIV-positive persons have a median household income about \$4,000 more than the general population, the Hispanic and Black/African American HIV population is close to \$3,000 less. On Figure 131, HIV-positive females in Region 6 are estimated to have about \$9,000 more than HIV-positive males and \$8,000 more than the general population.

**Figure 130: Region 6 - Median Household Income Among HIV-Positive Kansans vs. Region 6 General Population by Race/Ethnicity**

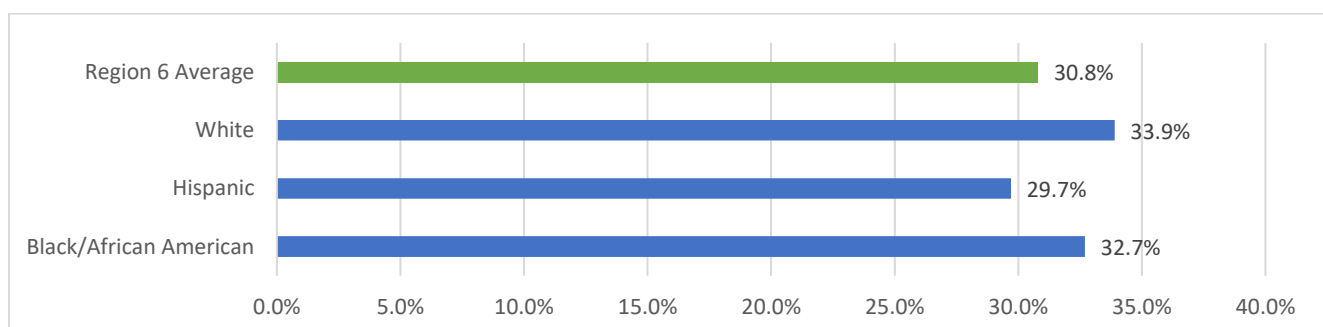


**Figure 131: Region 6 - Median Household Income Among HIV-Positive Kansans by Sex at Birth**

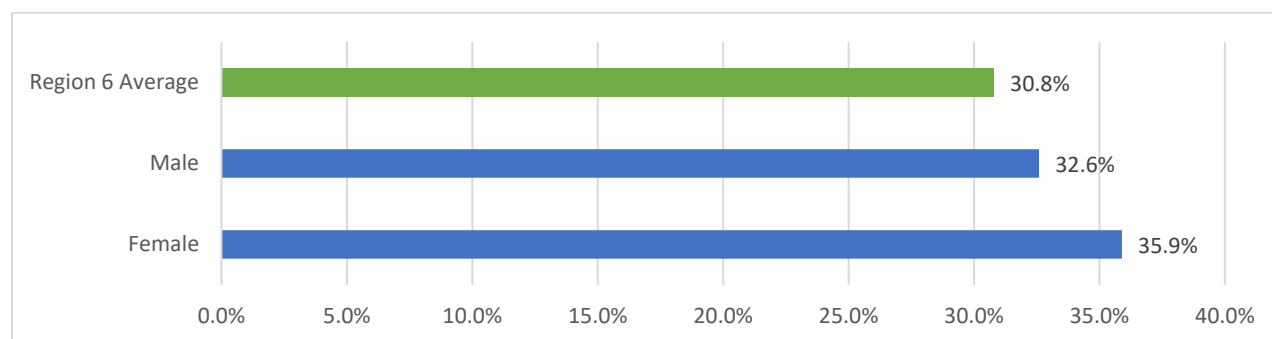


Among racial/ethnic demographics in Region 6, the HIV population is close to the regional average for the general population. Only the Hispanic HIV population is under the regional average, with an estimated 29.7% of HIV-positive Hispanic persons holding a bachelor's degree. In Figure 133, HIV-positive males and females are higher than the general population's average in the region with HIV-positive females 3.3 points higher than HIV-positive males.

**Figure 132: Region 6 - HIV-Positive Kansans with a Bachelor's Degree vs. Region 6 General Population by Race/Ethnicity**



**Figure 133: Region 6 - HIV-Positive Kansans with a Bachelor's Degree by Sex at Birth**

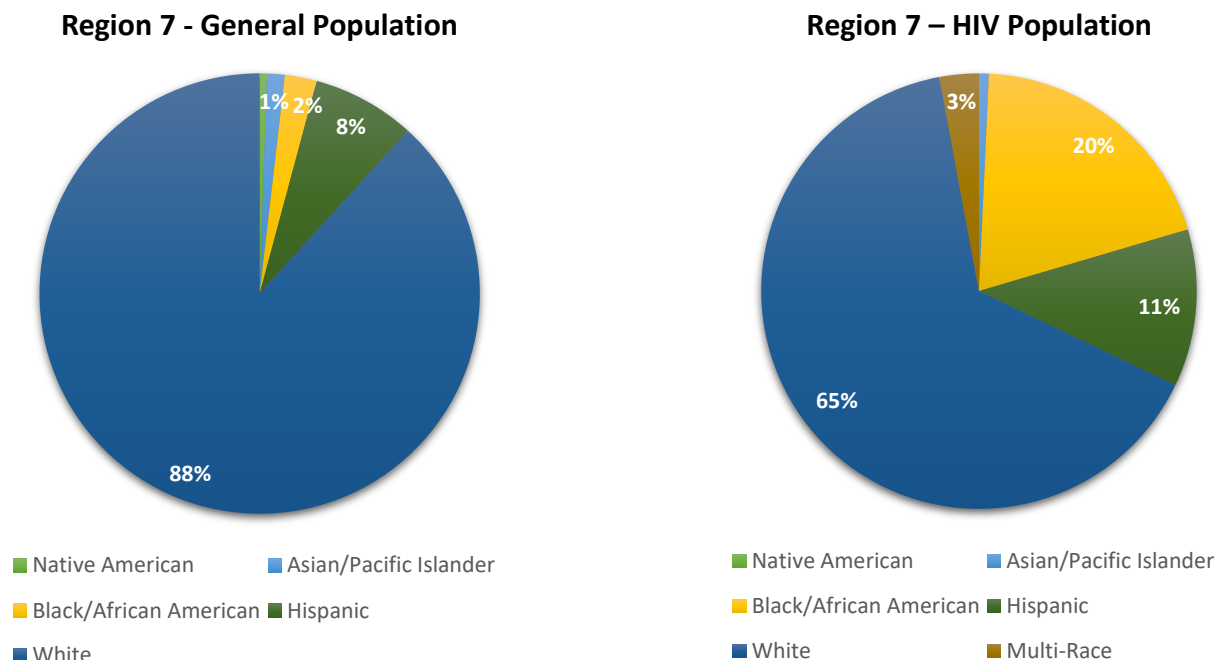


## Region 7 – Salina

Region 7 is in northwestern and north central Kansas and consists of thirty-one counties: Barton, Lincoln, Republic, Cheyenne, Logan, Rice, Cloud, Marion, Rooks, Decatur, McPherson, Russell, Dickinson, Mitchell, Saline, Ellis, Norton, Sheridan, Ellsworth, Osborne, Sherman, Gove, Ottawa, Smith, Graham, Phillips, Thomas, Jewell, Rawlins, Trego, and Wallace. Thirteen of the counties in Region 7 are considered frontier counties. This is the largest region by geographical land mass. In 2017, the estimated population of Region 7 was 283,763. Region 7 consisted of 138 prevalent cases by December 31, 2017. 119 persons in Region 7 were geocoded to analyze the social determinants of health.

Figure 134 is an illustration of the racial/ethnic breakdown in the general population and HIV population in Region 7. In Region 7, the Black/African American population is disproportionately affected by the HIV epidemic making up 2% of the general population but 20% of the HIV population.

**Figure 134: HIV Prevalence in Region 7 by Race/Ethnicity, 2017**



Overall, the Black/African American HIV population in Region 7 makes up about 20% of the total HIV population, but since 2013, 24% of all new cases have been among this demographic. The incidence totals for the White HIV population are lower than its total prevalence in the region, as shown in Figure 135.

**Figure 135: Region 7 - HIV Incidence and Prevalence by Race/Ethnicity and Sex at Birth, 2017**

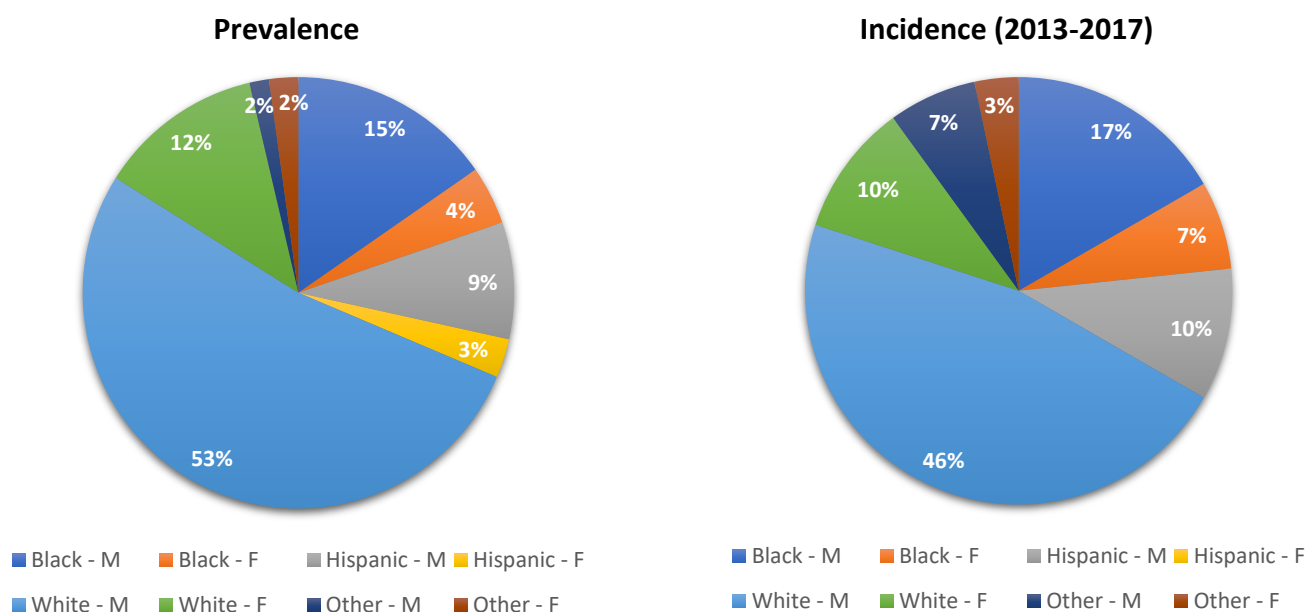


Table 39 shows a relatively older population, with the majority of HIV-positive persons between the age of 50 and 64. Most new cases in Region 7 occur in people between the age of 20 and 29, but there is also a higher number of incidence in the age group 35 to 39 since 2013. Most of the NIR factors in this region are from the 35 to 39 years of age demographic. In contrast, there is an identified risk factor for every person between 20 and 29 years of age.

**Table 39: Region 7 - HIV Prevalence (2017) and Incidence (2013-2017) by Age Group**

|                 | Prevalence | Incidence |
|-----------------|------------|-----------|
| <b>0 to 4</b>   | 0          | 0         |
| <b>5 to 9</b>   | 0          | 0         |
| <b>10 to 14</b> | 0          | 0         |
| <b>15 to 19</b> | 0          | 1         |
| <b>20 to 24</b> | 4          | 6         |
| <b>25 to 29</b> | 14         | 8         |
| <b>30 to 34</b> | 11         | 1         |
| <b>35 to 39</b> | 10         | 9         |
| <b>40 to 44</b> | 16         | 1         |
| <b>45 to 49</b> | 8          | 2         |
| <b>50 to 54</b> | 22         | 1         |
| <b>55 to 59</b> | 26         | 0         |
| <b>60 to 64</b> | 20         | 1         |
| <b>65+</b>      | 7          | 0         |

Figure 136 shows a breakdown of the transmission risk factors among PLWH in Region 7 where MSM is the predominant risk factor. Here, the prevalence and incidence are nearly equivalent among MSM. Given that 23% of the prevalent HIV population have IDU as a risk factor and 7% since 2013 have this same risk factor, many of the NIRs in the region from 2013 to 2017 are most likely people that did not share accurate drug history information.

**Figure 136: Region 7 - HIV Incidence and Prevalence by Exposure Category, 2017**

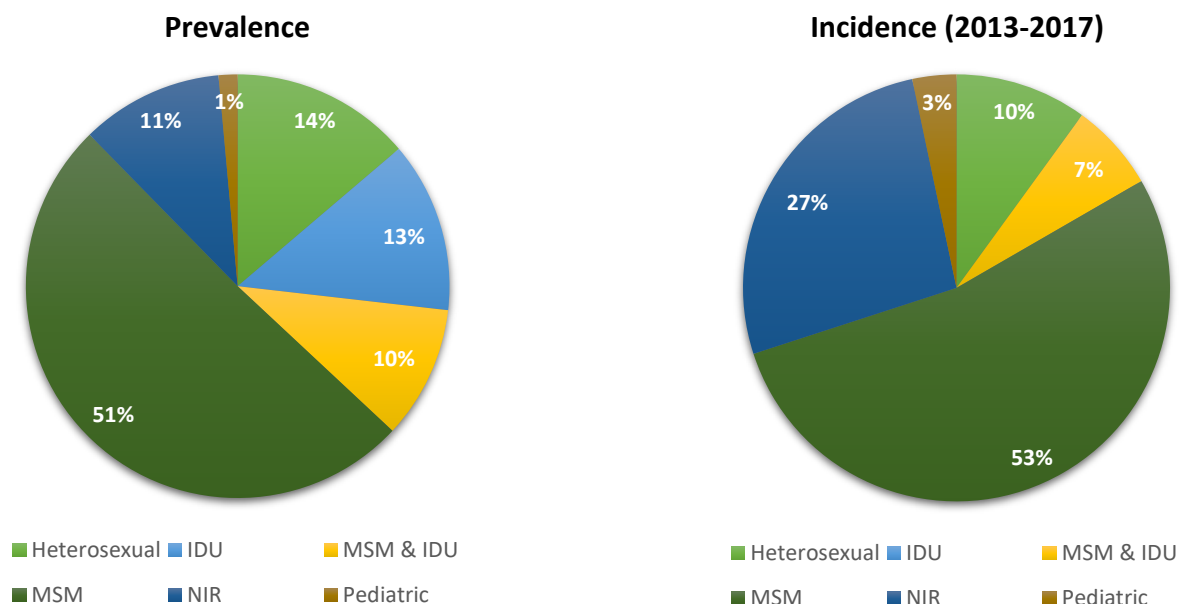


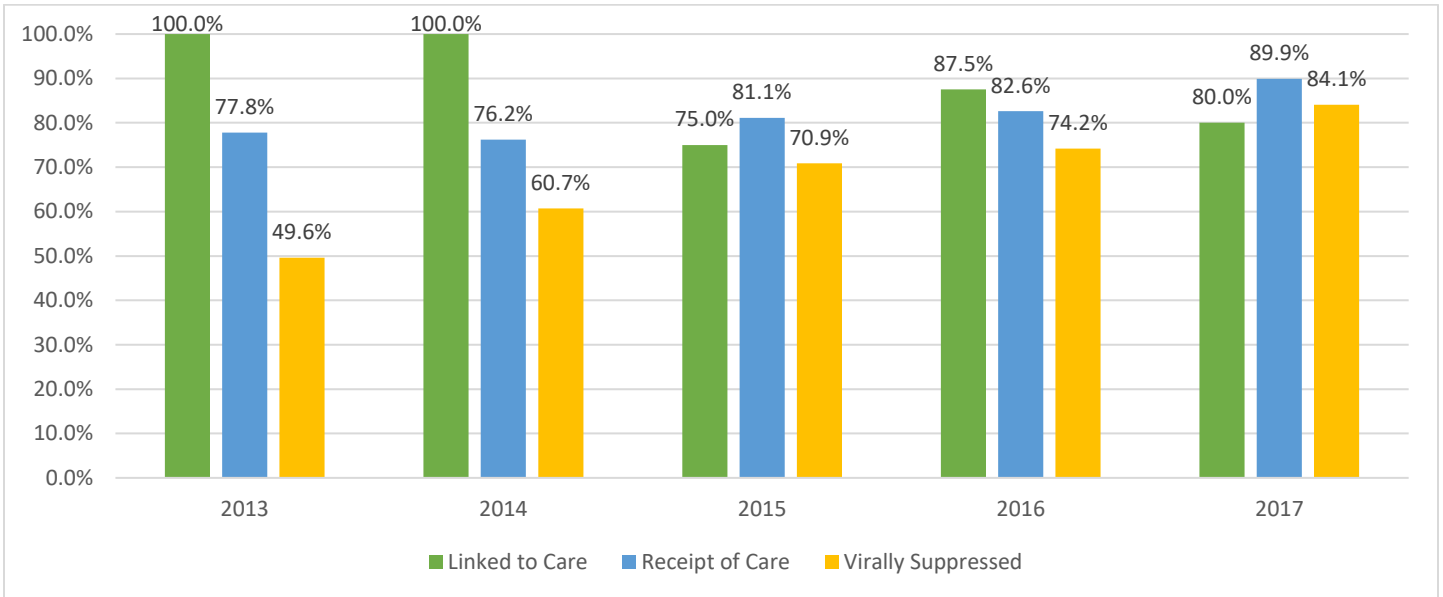
Table 40 shows that 30% of all new HIV-positive persons in this region were diagnosed as HIV and Stage 3 concurrently since 2013.

**Table 40: Region 7 - Incidence Diagnosis Status (2013-2017)**

|             | Initial HIV Only | Stage 3 Within 12 Months of Dx | Concurrent HIV & Stage 3 | Total |
|-------------|------------------|--------------------------------|--------------------------|-------|
| <b>2013</b> | 4                | 0                              | 3                        | 7     |
| <b>2014</b> | 3                | 0                              | 3                        | 6     |
| <b>2015</b> | 2                | 1                              | 1                        | 4     |
| <b>2016</b> | 6                | 0                              | 2                        | 8     |
| <b>2017</b> | 5                | 0                              | 0                        | 5     |

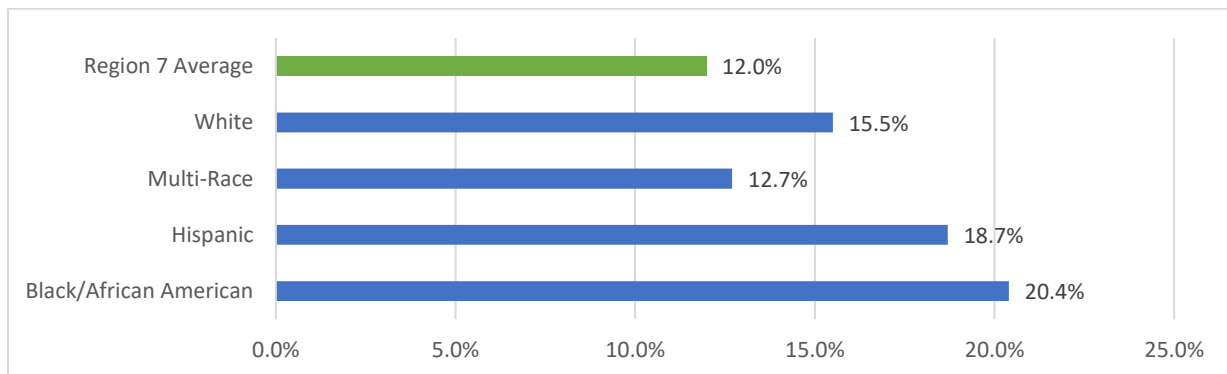
Since 2013, viral suppression and receipt of care numbers have increased and are above the national average. As shown in Figure 137, in 2017, 84.1% of HIV-positive persons living in Region 7 were considered virally suppressed and 89.9% had seen a medical provider at least once that year. Due to the low number of incidence, linked to care numbers in this region can fluctuate dramatically if one patient is unable to be located for an interview by a Disease Intervention Specialist.

**Figure 137: Region 7 - Continuum of Care (2013-2017)**



In Region 7, all HIV-positive persons are more likely to be living in poverty than the general population, as seen in Figure 138. Hispanic and Black/African American HIV-positive persons have the highest estimated rates of poverty in Region 7. HIV-positive females are also more likely to be living in poverty than HIV-positive men, though, both have higher rates of poverty than the regional average (Figure 139).

**Figure 138: Region 7 - Poverty Rates Among HIV-Positive Kansans vs. Region 7 General Population by Race/Ethnicity**



**Figure 139: Region 7 - Poverty Rates Among HIV-Positive Kansans by Sex at Birth**

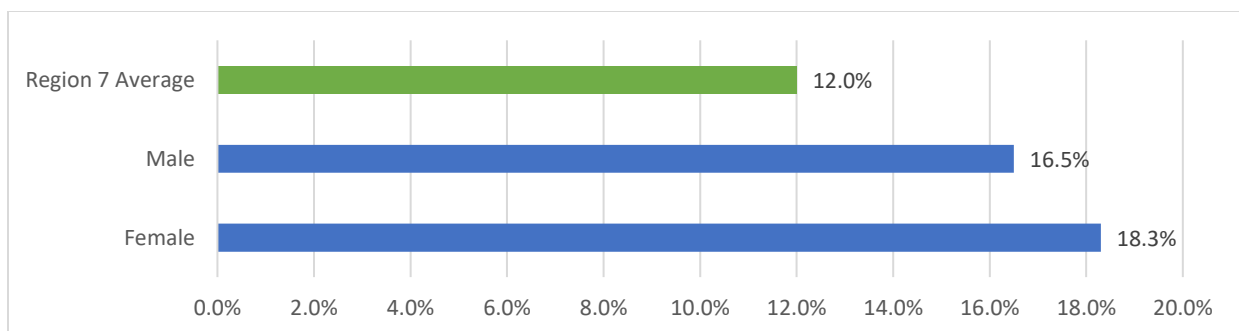
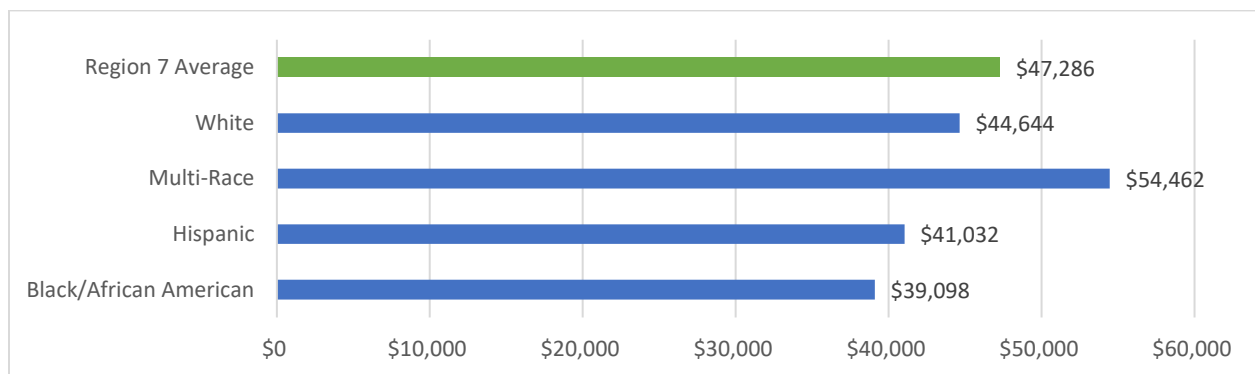
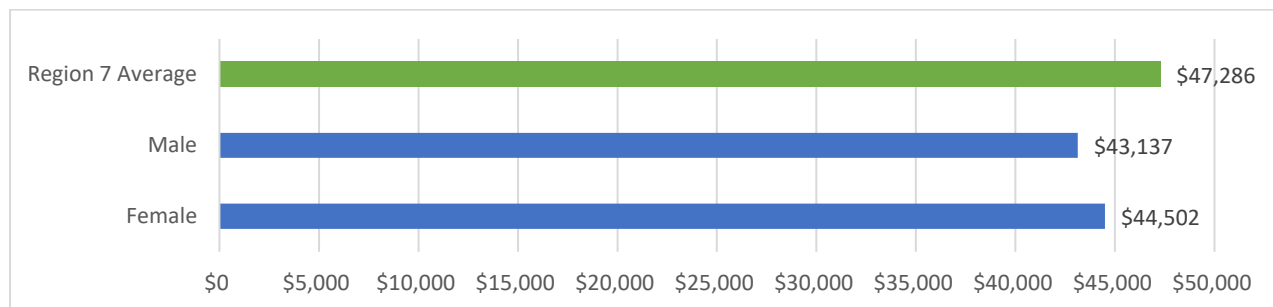


Figure 140 illustrates the differences in median household income between HIV-positive persons and the regional general population. Only Multi-Race HIV-positive persons have a higher average median household income than the regional average despite having higher rates of poverty. The Black/African American HIV population averages a median household income close to \$8,000 less than general population. In Figure 141, HIV-positive females have a slightly higher averaged median household income than HIV-positive males.

**Figure 140: Region 7 - Median Household Income Among HIV-Positive Kansans vs. Region 7 General Population by Race/Ethnicity**

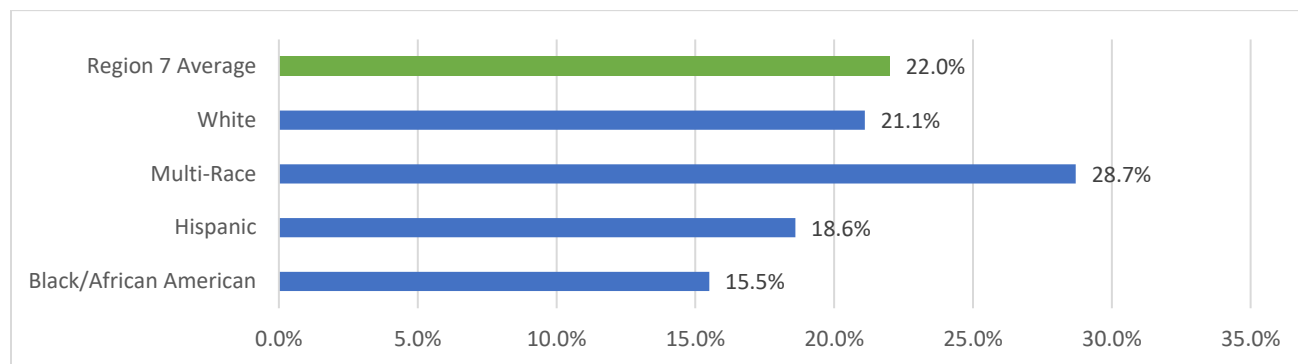


**Figure 141: Region 7 - Median Household Income Among HIV-Positive Kansans by Sex at Birth**

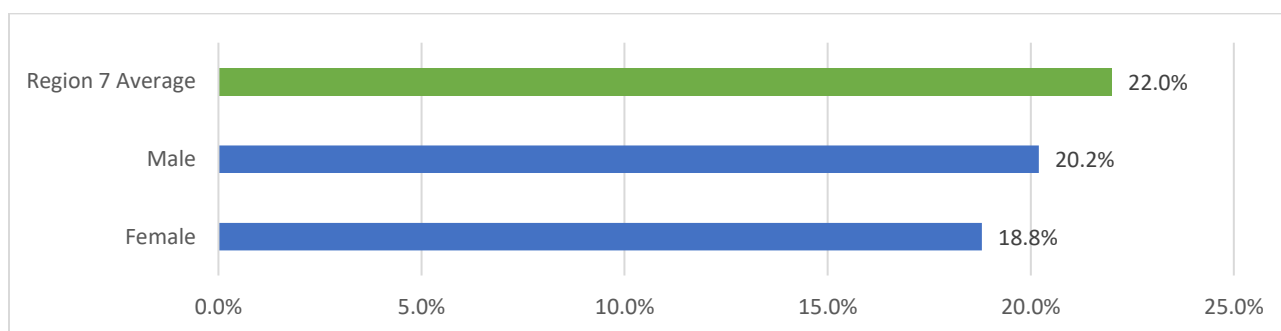


In Region 7, Multi-Race HIV-positive persons are most likely to hold a bachelor's degree while the White HIV population is slightly less likely to have a bachelor's degree than the general population. Black/African American HIV-positive persons in the region fare worse off with 15.5% of the population estimated to hold a bachelor's degree or higher. Females living with HIV are also less likely than HIV-positive men to have bachelor's degree (Figure 143).

**Figure 142: Region 7 - HIV-Positive Kansans with a Bachelor's Degree  
vs. Region 7 General Population by Race/Ethnicity**



**Figure 143: Region 7 - HIV-Positive Kansans with a Bachelor's Degree by Sex at Birth**

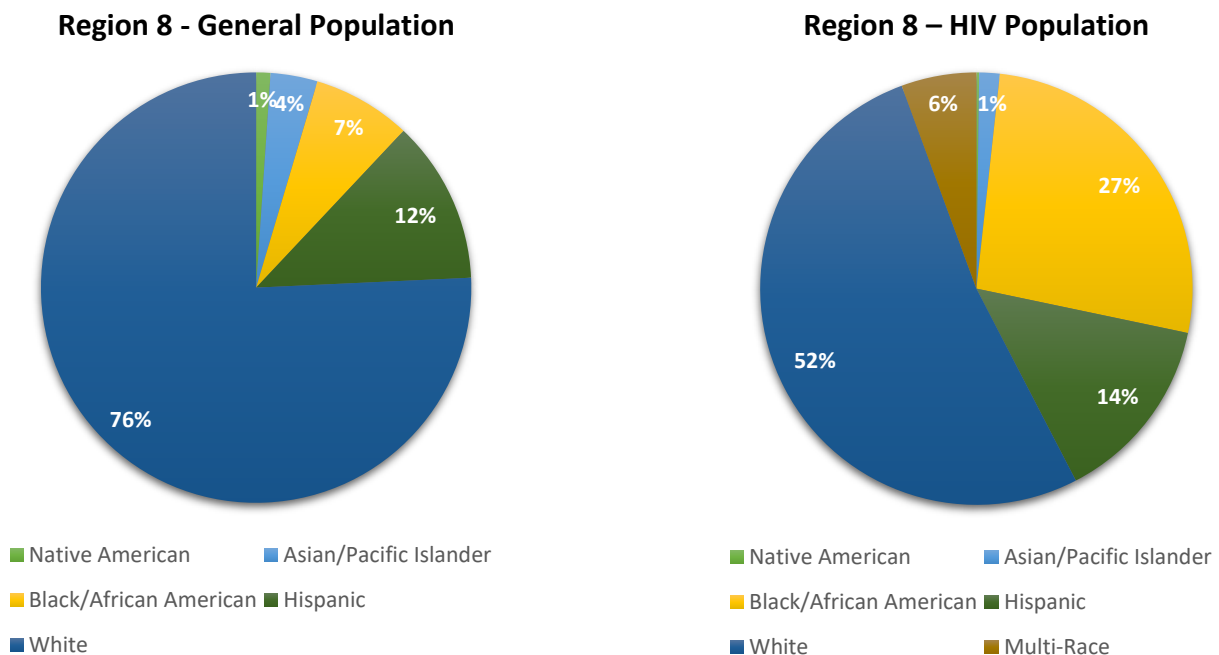


## Region 8 – Wichita

Region 8 is in south central Kansas and consists of fifteen counties: Barber, Elk, Pratt, Butler, Greenwood, Reno, Chase, Harper, Sedgwick, Chautauqua, Harvey, Stafford, Cowley, Kingman, and Sumner. Sedgwick County is home to the Wichita State University campus and is the largest metropolitan area in Kansas. Region 8 is the largest region for general population and HIV-positive population in the state of Kansas. In 2017, the estimated population of Region 8 was 782,096. Region 8 consisted of 983 prevalent cases by December 31, 2017. 680 HIV-positive persons living in Region 8 were geocoded to analyze the social determinants of health.

7% of the general population in Region 8 is Black/African American, but among PLWH, 27% of the HIV population is Black/African American. The non-Hispanic White population makes up 76% of Region 8 and 52% of all prevalent HIV cases.

**Figure 144: HIV Prevalence in Region 8 by Race/Ethnicity, 2017**



Incidence within the last five years in Region 8 show that Black/African Americans are becoming more disproportionately affected by the HIV. As shown in Figure 145, 33% of all new cases since 2013 have been among the Black/African American community. While the proportion of White males diagnosed with HIV from 2013 to 2017 was lower than the total prevalence, White females show a slightly higher proportion of newly diagnosed patients. Prevalence and incidence among the Hispanic HIV population are 14%, but incidence among Hispanic males is slightly higher than the prevalent Hispanic HIV population.

**Figure 145: Region 8 - HIV Incidence and Prevalence by Race/Ethnicity and Sex at Birth, 2017**

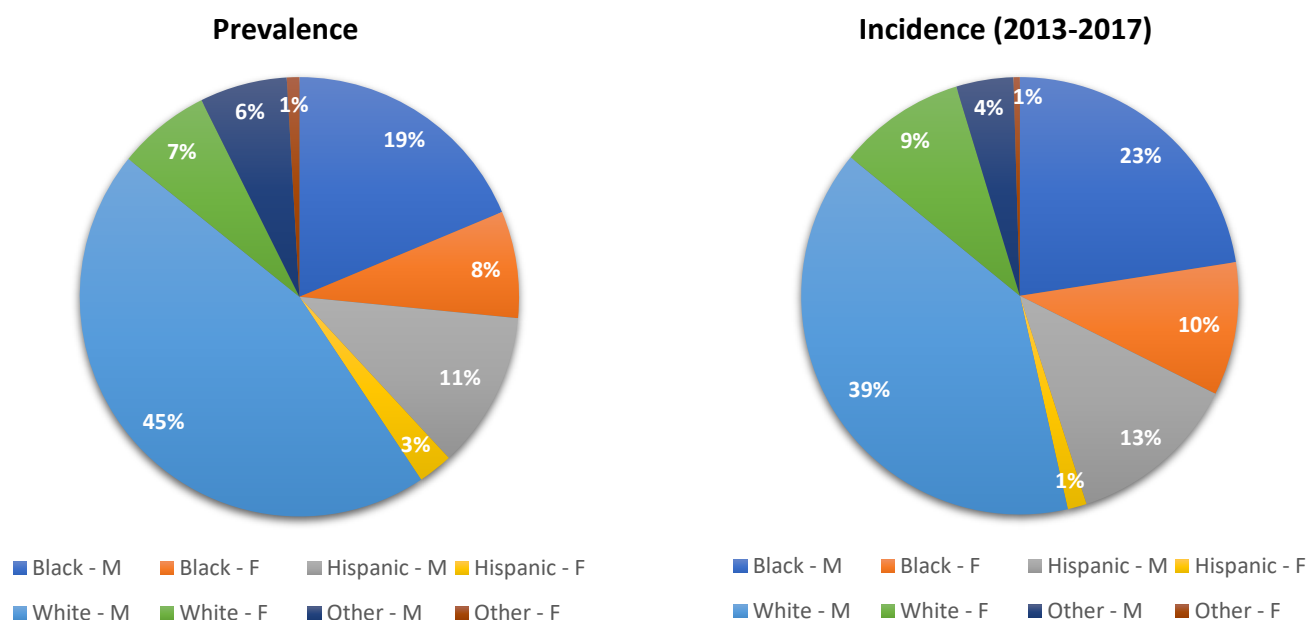


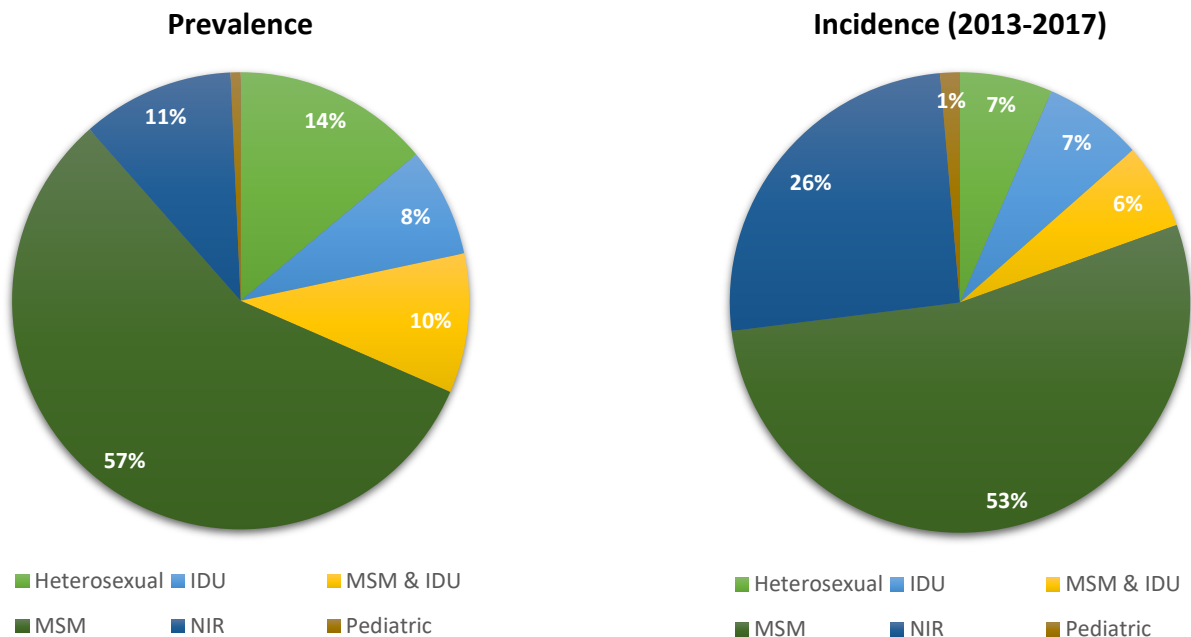
Table 41 shows that the majority of the HIV-population in Region 8 are between the ages of 45 and 59 while the majority of new cases occur in the population between 20 and 39 years of age. Similar to Region 7, there is a high number of incidence among an older demographic, people between 45 to 49 years of age. Of the 55 newly diagnosed patients since 2013 with NIR, 11 occurred within this older age group. Therefore, nearly 40% of patients diagnosed in this age group have NIR. Newly diagnosed patients between 30 and 39 years of age accounted for 13 of the NIRs (26% of the demographic), and newly diagnosed patients between 20 and 29 years of age accounted for 11 of the NIRs (16% of the demographic).

**Table 41: Region 8 - HIV Prevalence (2017) and Incidence (2013-2017) by Age Group**

|                 | Prevalence | Incidence |
|-----------------|------------|-----------|
| <b>0 to 4</b>   | 1          | 0         |
| <b>5 to 9</b>   | 1          | 3         |
| <b>10 to 14</b> | 3          | 1         |
| <b>15 to 19</b> | 5          | 8         |
| <b>20 to 24</b> | 28         | 35        |
| <b>25 to 29</b> | 84         | 36        |
| <b>30 to 34</b> | 101        | 26        |
| <b>35 to 39</b> | 78         | 24        |
| <b>40 to 44</b> | 96         | 17        |
| <b>45 to 49</b> | 130        | 27        |
| <b>50 to 54</b> | 176        | 14        |
| <b>55 to 59</b> | 145        | 13        |
| <b>60 to 64</b> | 78         | 6         |
| <b>65+</b>      | 57         | 5         |

Due to the proportion of NIRs illustrated in Figure 146, it is difficult to predict whether HIV incidence among the MSM population is declining, increasing, or relatively stagnant compared to prevalence. Heterosexual and IDU risk factors in newly diagnosed patients are lower than the totals from the overall HIV population in Region 8. If the Heterosexual, IDU, MSM & IDU, and NIR totals from incidence were the same as the prevalence, it would put the proportion of MSM cases at 56%, meaning Region 8 has relatively little change when comparing incidence with prevalence. However, the NIR numbers may be higher due to the stigma of HIV or drug use in minority communities and older populations.

**Figure 146: Region 8 - HIV Incidence and Prevalence by Exposure Category, 2017**



As shown in Table 42, 34.8% of newly diagnosed HIV patients were diagnosed as Stage 3 concurrently or within one year of initial diagnosis.

**Table 42: Region 8 - Incidence Diagnosis Status (2013-2017)**

|             | Initial HIV Only | Stage 3 Within 12 Months of Dx | Concurrent HIV & Stage 3 | Total |
|-------------|------------------|--------------------------------|--------------------------|-------|
| <b>2013</b> | 17               | 2                              | 15                       | 34    |
| <b>2014</b> | 30               | 0                              | 10                       | 40    |
| <b>2015</b> | 43               | 4                              | 16                       | 63    |
| <b>2016</b> | 30               | 2                              | 12                       | 44    |
| <b>2017</b> | 20               | 2                              | 12                       | 34    |

Regions 7 and 8 have the highest estimated rates of viral suppression among HIV-positive persons in Kansas. In 2017, Region 8 was 0.1 points higher than Region 7 in this category. 89.7% of HIV-positive Kansans living in Region 8 saw a provider sometime in 2017. Despite having high incidence totals, Region 8 also linked more than

80% of newly diagnosed patients into medical care within one month. In 2017, 97.1% of newly diagnosed patients were quickly linked to care.

**Figure 147: Region 8 - Continuum of Care (2013-2017)**

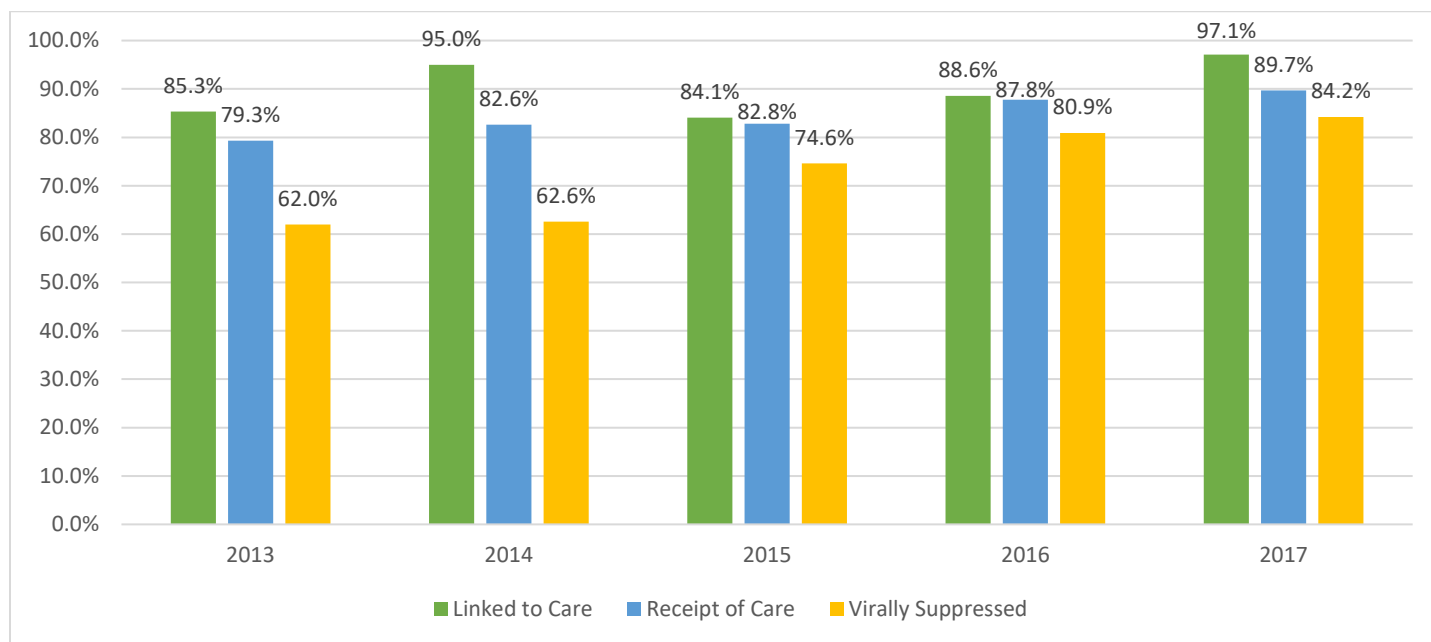
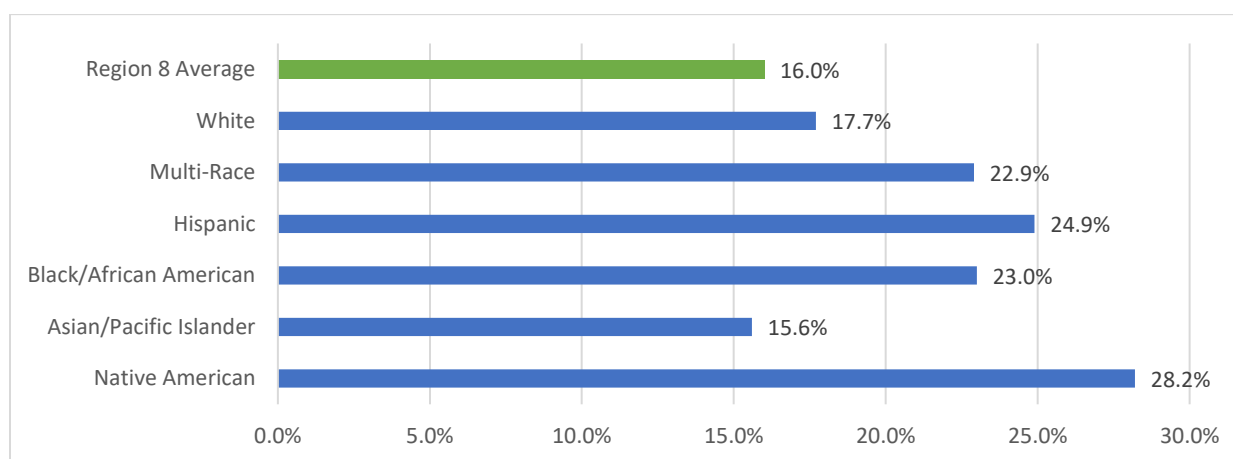
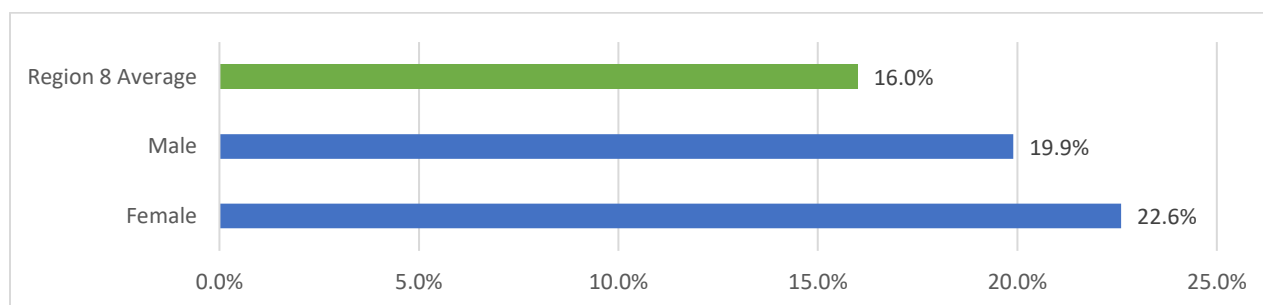


Figure 148 shows the estimated proportion of HIV-positive Kansans in Region 8 that are living under the federal poverty level. Only Asian/Pacific Islanders living with HIV are less likely than the region's general population to be living in poverty. Native American, Hispanic, Black/African American, and Multi-Race HIV-positive individuals are more than 20% likely to be living under the federal poverty level. 22.6% of HIV-positive females are estimated to be living in poverty compared to 19.9% of HIV-positive males (Figure 149).

**Figure 148: Region 8 - Poverty Rates Among HIV-Positive Kansans vs. Region 8 General Population by Race/Ethnicity**

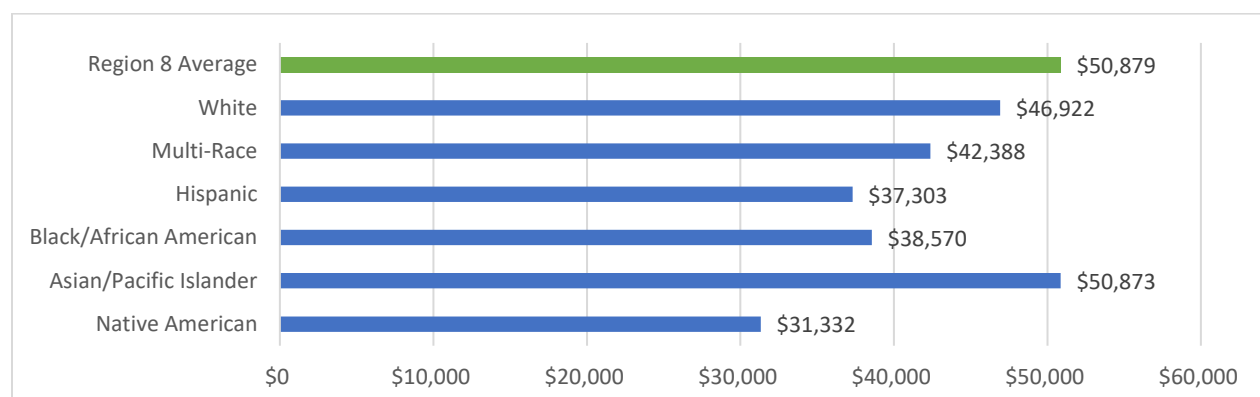


**Figure 149: Region 8 - Poverty Rates Among HIV-Positive Kansans by Sex at Birth**

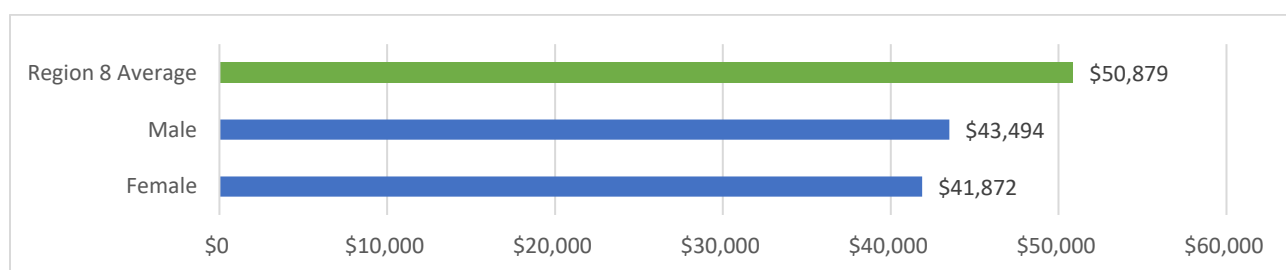


Median household income among HIV-positive Asian/Pacific Islanders is \$6 less than the regional average. Native Americans living with HIV have an average median household income that is nearly \$19,000 less than the general population and Hispanics living with HIV have a median household income that is close to \$13,000 less than the general population. HIV-positive males and females, shown in Figure 150, have average median household incomes that are lower than the general population. For HIV-positive females, they are estimated to have a median household income that is \$9,000 lower than the regional average.

**Figure 150: Region 8 - Median Household Income Among HIV-Positive Kansans vs. Region 8 General Population by Race/Ethnicity**



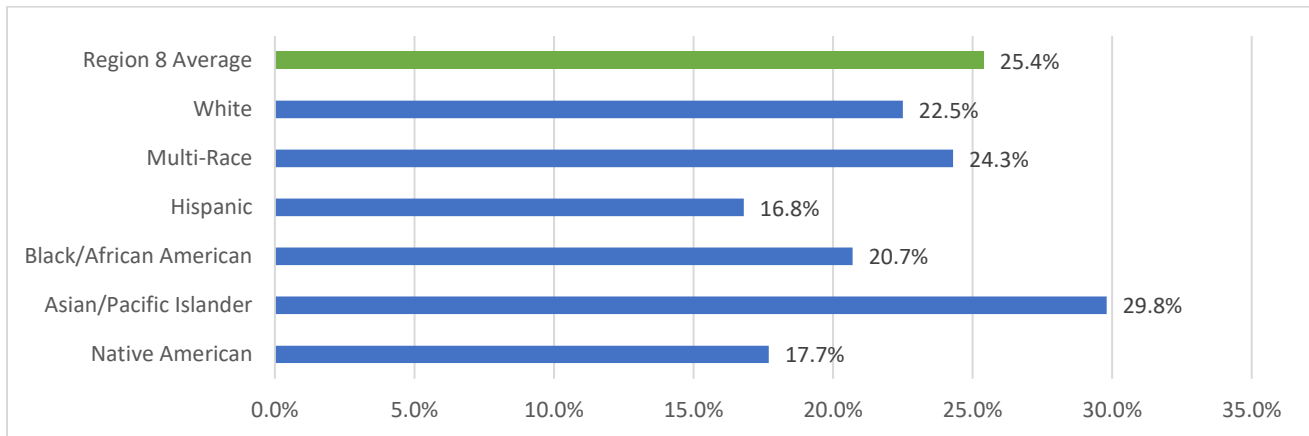
**Figure 151: Region 8 - Median Household Income Among HIV-Positive Kansans by Sex at Birth**



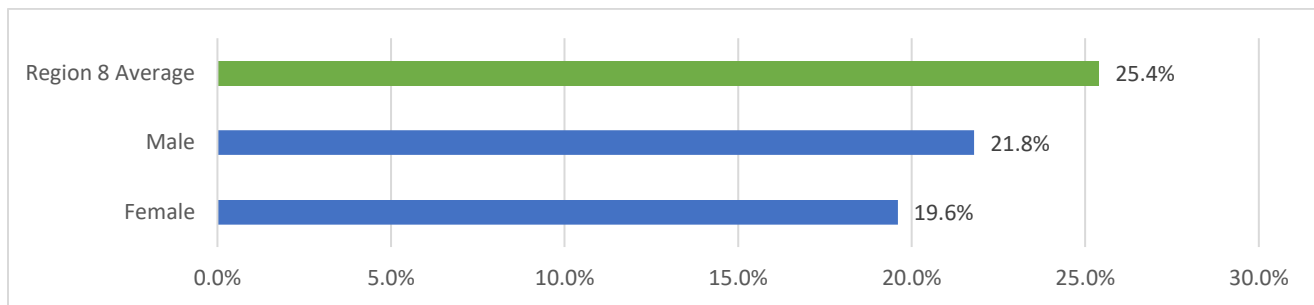
The estimated proportion of the HIV-population that have a bachelor's degree or higher varies greatly by race/ethnicity. In Region 8, 25.4% of the general population hold a bachelor's degree. Asian/Pacific Islanders with HIV are more likely to have a bachelor's degree than the general population, shown in Figure 152. White and Multi-Race HIV-positive individuals are slightly lower than regional average. However, the HIV Hispanic population are the least likely to have a bachelor's degree. Figure 153 shows these differences by sex at birth,

where HIV-positive females are less likely than HIV-positive males to have a bachelor's degree, but both demographics are lower than the general population's average.

**Figure 152: Region 8 - HIV-Positive Kansans with a Bachelor's Degree  
vs. Region 8 General Population by Race/Ethnicity**



**Figure 153: Region 8 - HIV-Positive Kansans with a Bachelor's Degree by Sex at Birth**

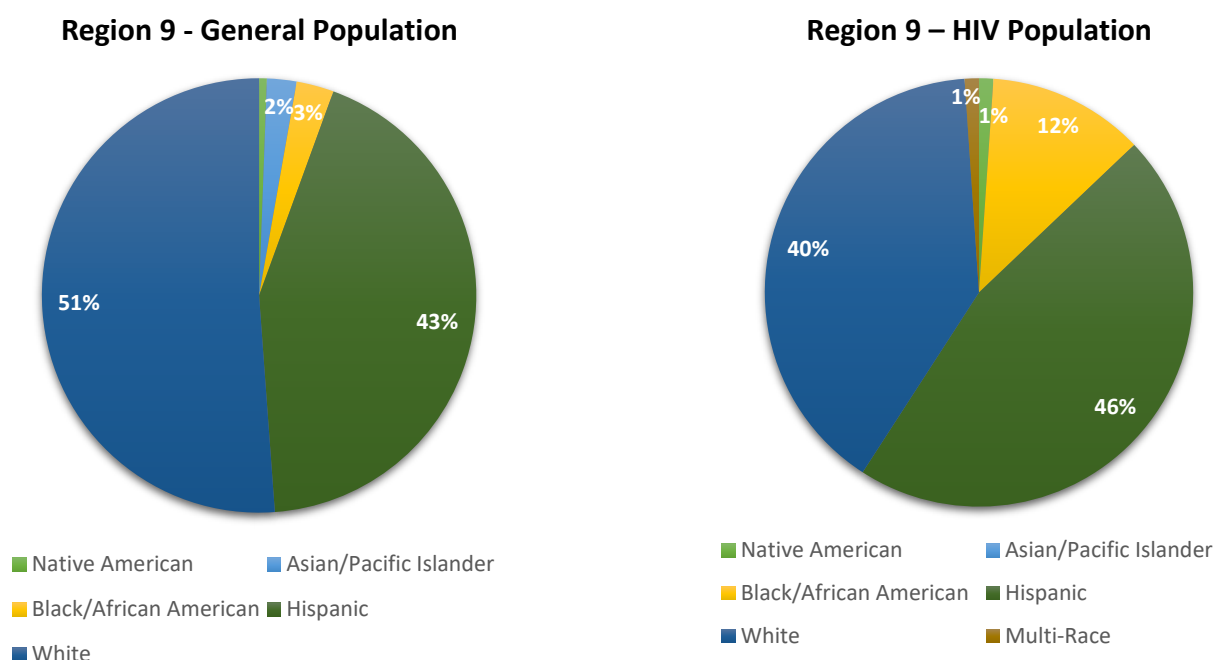


## Region 9 – Outreach Clinics

Region 9 is in the southwestern corner of Kansas and consists of twenty-four counties: Clark, Hamilton, Ness, Comanche, Haskell, Pawnee, Edwards, Hodgeman, Rush, Finney, Kearny, Scott, Ford, Kiowa, Seward, Grant, Lane, Stanton, Gray, Meade, Stevens, Greeley, Morton, and Wichita. Fifteen counties are considered frontier counties and average less than six persons per square mile. In 2017, the estimated population of Region 9 was 166,036. Region 9 consists of 93 prevalent cases as of December 31, 2017. 59 of these cases were geocoded to analyze the social determinants of health.

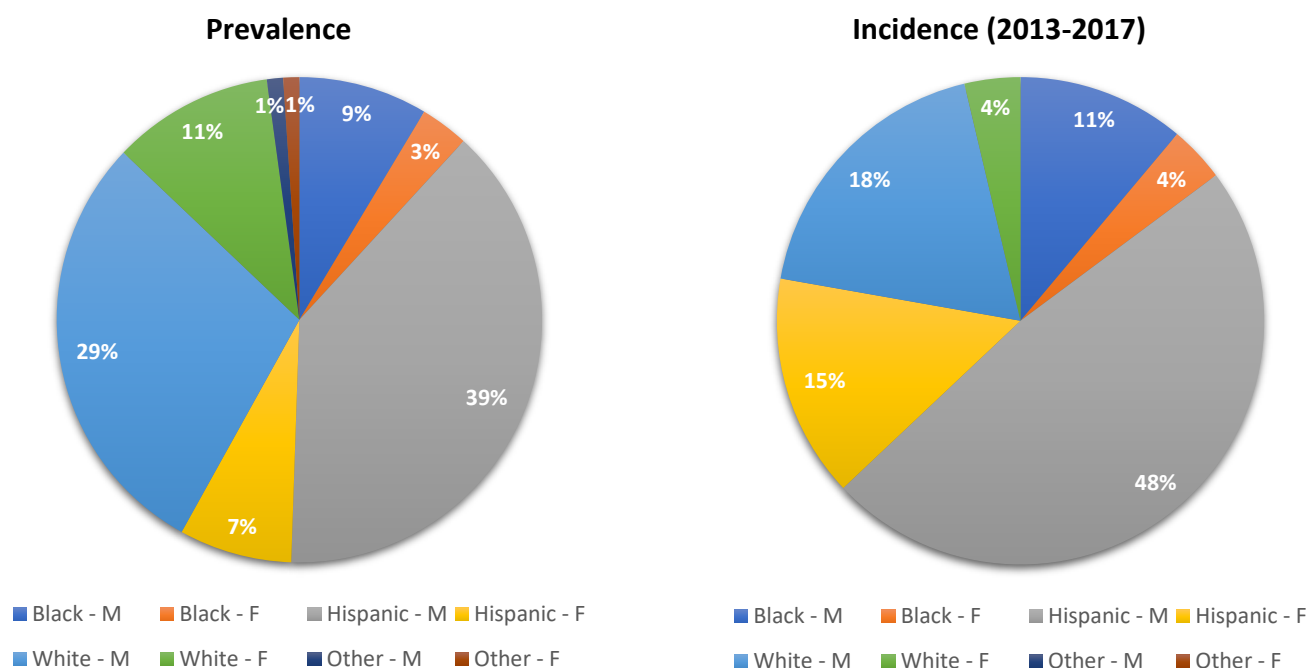
Figure 154 shows that 3% of the general population in Region 9 are people identified as Black/African American and that 12% of the HIV-population in the region are among this demographic. Black/African American persons are disproportionately affected by HIV in nearly each region. Region 9 has the highest proportion of Hispanic persons in the state of Kansas. The proportion of HIV-positive Hispanic persons is closely representative to the proportion of overall Hispanic persons among the region's general population.

**Figure 154: HIV Prevalence in Region 9 by Race/Ethnicity, 2017**



When analyzing the racial/ethnic demographics and stratifying it by sex at birth, the incidence numbers in Figure 155 show an increasing proportion of Hispanic persons diagnosed with HIV. While 46% of total prevalence in Region 9 are Hispanic (39% male; 7% female), 48% of new cases since 2013 have been from Hispanic males and 15% from Hispanic females. Among Black/African American persons, incidence is slightly higher than prevalence with 15% of incidence compared to 12% of prevalence.

**Figure 155: Region 9 - HIV Incidence and Prevalence by Race/Ethnicity and Sex at Birth, 2017**



The majority of people living with HIV in Region 9 are relatively young and between the ages of 35 and 49, shown in Table 43. While new diagnoses in Region 9 are quite disperse between ages 15 and 39, the majority of new cases happen in people between 20 and 24 years of age.

**Table 43: Region 9 - HIV Prevalence (2017) and Incidence (2013-2017) by Age Group**

|                 | Prevalence | Incidence |
|-----------------|------------|-----------|
| <b>0 to 4</b>   | 0          | 0         |
| <b>5 to 9</b>   | 0          | 0         |
| <b>10 to 14</b> | 0          | 0         |
| <b>15 to 19</b> | 1          | 4         |
| <b>20 to 24</b> | 9          | 8         |
| <b>25 to 29</b> | 4          | 4         |
| <b>30 to 34</b> | 5          | 4         |
| <b>35 to 39</b> | 19         | 5         |
| <b>40 to 44</b> | 13         | 1         |
| <b>45 to 49</b> | 13         | 0         |
| <b>50 to 54</b> | 6          | 1         |
| <b>55 to 59</b> | 12         | 0         |
| <b>60 to 64</b> | 6          | 0         |
| <b>65+</b>      | 5          | 0         |

Figure 156 shows the transmission risk factors for HIV-positive people living in Region 9. Since 2013, Region 9 has the highest proportion of people with NIR factor. Given the increase in diagnoses among the Hispanic

population, the most likely cause is stigma within the community. From 2013 to 2017, people diagnosed with NIR outnumbered people diagnosed as MSM. Having a substantially high proportion of NIRs limits our ability to assess what factors are affecting the spread of HIV in the region.

**Figure 156: Region 9 - HIV Incidence and Prevalence by Exposure Category, 2017**

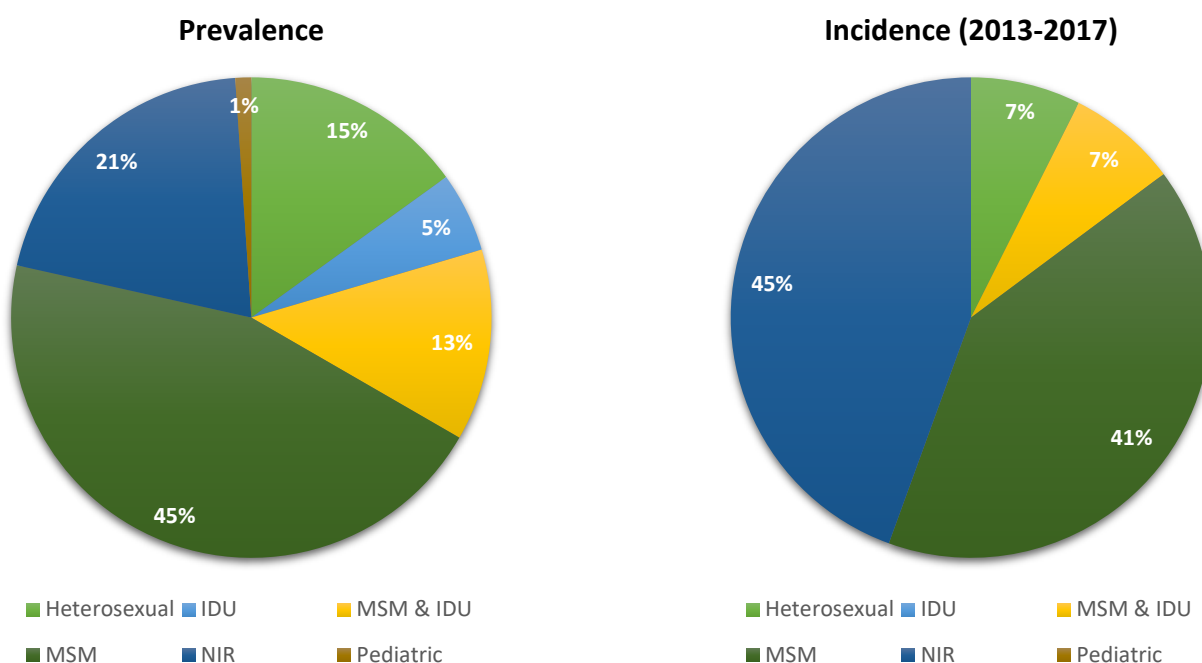


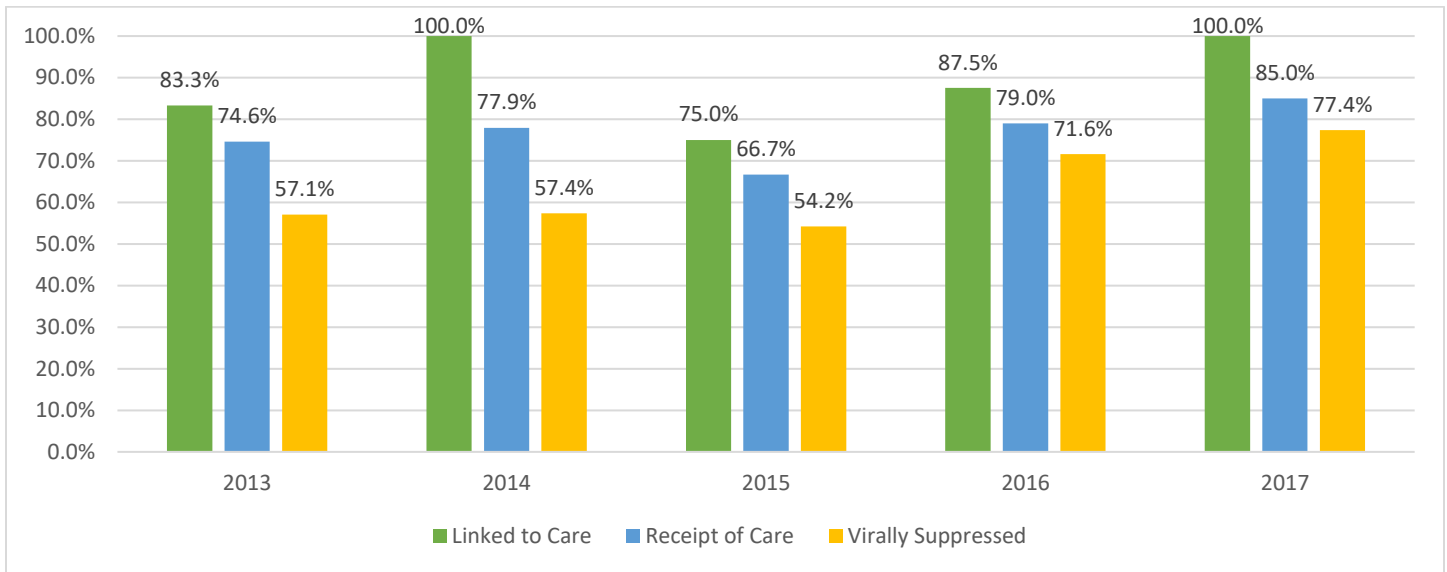
Table 44 illustrates that 37% of new diagnoses were diagnosed as HIV and Stage 3 concurrently or within one year. The total is slightly higher than the statewide average.

**Table 44: Region 9 - Incidence Diagnosis Status (2013-2017)**

|             | Initial HIV Only | Stage 3 Within 12 Months of Dx | Concurrent HIV & Stage 3 | Total |
|-------------|------------------|--------------------------------|--------------------------|-------|
| <b>2013</b> | 3                | 0                              | 3                        | 6     |
| <b>2014</b> | 1                | 0                              | 0                        | 1     |
| <b>2015</b> | 2                | 0                              | 2                        | 4     |
| <b>2016</b> | 3                | 0                              | 5                        | 8     |
| <b>2017</b> | 8                | 0                              | 0                        | 8     |

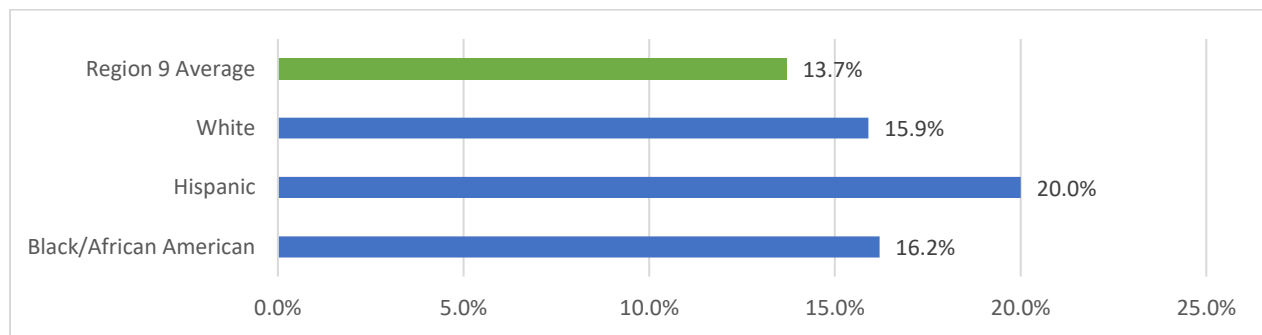
Figure 157 shows the proportion of patients that saw a medical provider, are virally suppressed, and linked to care between 2013 and 2017. As of 2017, 77.4% of the HIV population in Region 9 were virally suppressed and 85% saw a medical provider sometime within the year. Low incidence causes linked to care numbers in the region to fluctuate on a yearly basis. However, in 2017, Region 9 had its highest incidence total in the five-year period and 100% of these patients were linked to care within one month of diagnosis.

**Figure 157: Region 9 - Continuum of Care (2013-2017)**



The average poverty rate in Region 9 closely resembles the statewide average. By race/ethnicity, shown in Figure 158, each HIV-positive demographic is more likely to be living in poverty than the general population. 20% of HIV-positive Hispanic persons are estimated to be living under the federal poverty level in this region. The difference between HIV-positive males and females illustrated in Figure 159 is minimal and both are more likely to be living in poverty than the general population.

**Figure 158: Region 9 - Poverty Rates Among HIV-Positive Kansans vs. Region 9 General Population by Race/Ethnicity**



**Figure 159: Region 9 - Poverty Rates Among HIV-Positive Kansans by Sex at Birth**

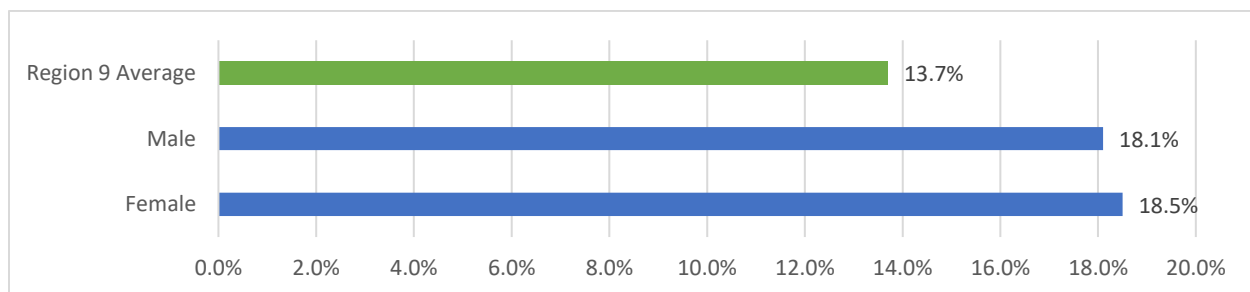
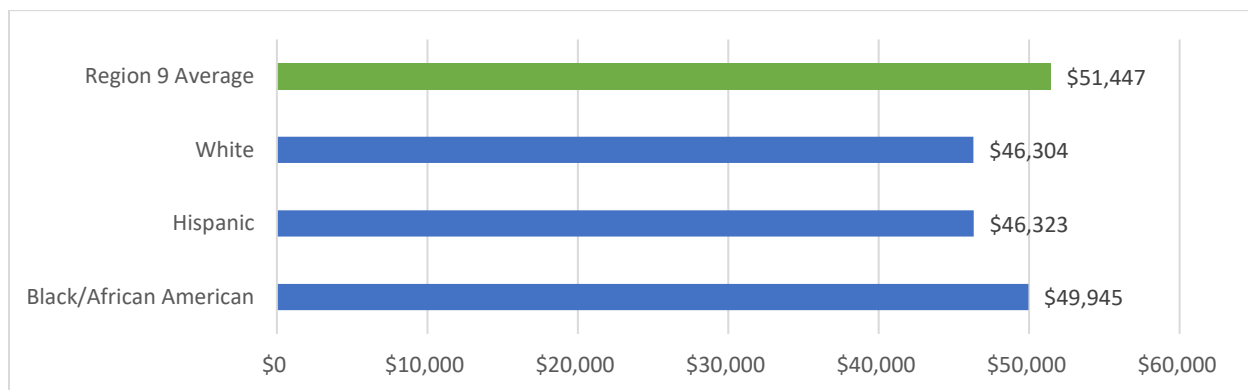


Figure 160 shows that the average median household income among HIV-positive persons and the general population have slight variations. Among the HIV population, Black/African Americans have the highest average median household income while the Hispanic HIV population median household income average is \$19 more than the White HIV population. However, Section 1 illustrated that per capita income among Hispanic populations in Kansas was significantly lower than every racial/ethnic demographic in the general population. In Region 9, it is likely that there are more income earners on average in one HIV-positive Hispanic household than HIV-positive White households. Figure 161 shows that HIV-positive females have the lowest median household income among all demographics.

**Figure 160: Region 9 - Median Household Income Among HIV-Positive Kansans vs. Region 9 General Population by Race/Ethnicity**



**Figure 161: Region 9 - Median Household Income Among HIV-Positive Kansans by Sex at Birth**

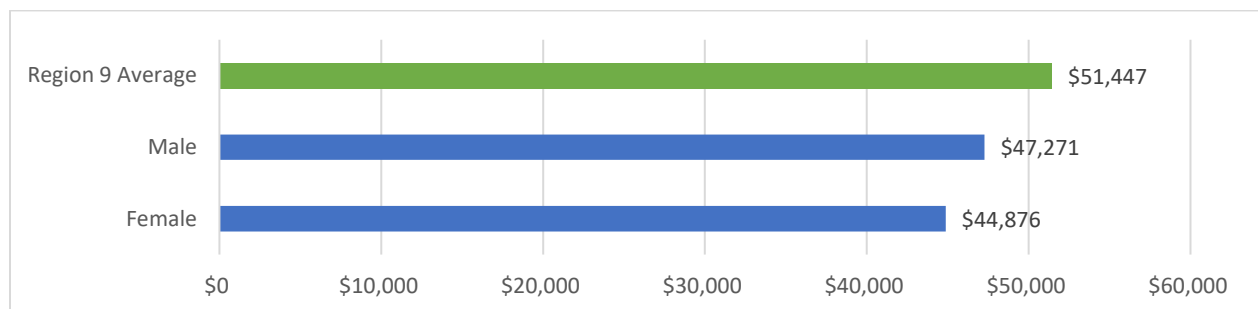
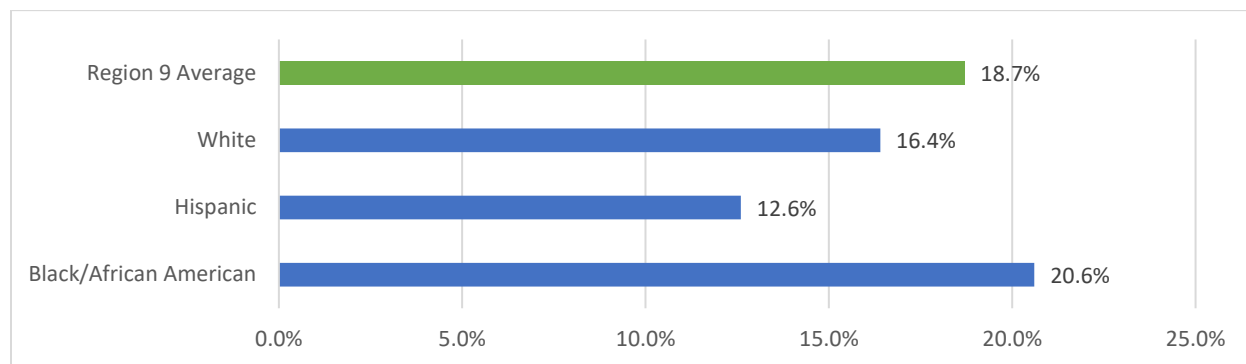
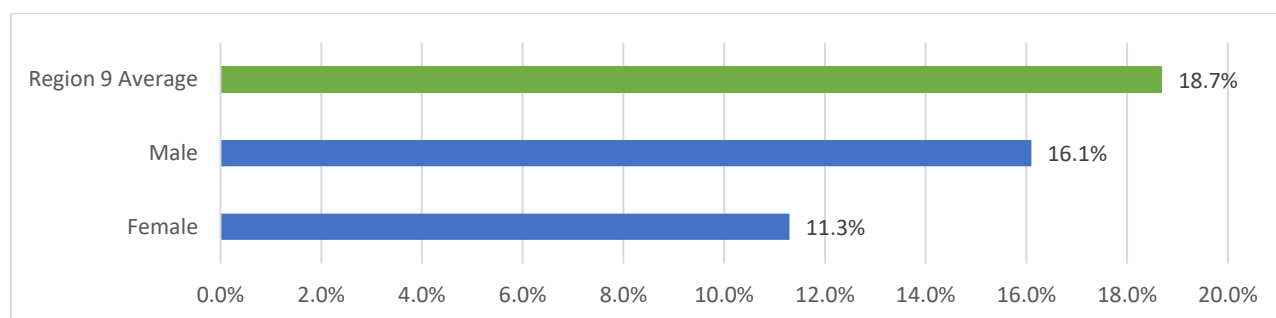


Figure 162 and Figure 163 show the estimated proportion of HIV-positive persons that have a bachelor's degree compared to the general population in Region 9. HIV-positive females are the least likely group to have a bachelor's degree (11.3%) with HIV-positive Hispanics closely behind (12.6%). In Region 9, Black/African Americans living with HIV are more likely than the general population to have a bachelor's degree.

**Figure 162: Region 9 - HIV-Positive Kansans with a Bachelor's Degree  
vs. Region 9 General Population by Race/Ethnicity**



**Figure 163: Region 9 - HIV-Positive Kansans with a Bachelor's Degree by Sex at Birth**



## *Part 5: Ryan White Services in Kansas*

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***Ryan White services: Part A, Part B, Part C & Part D  
Utilization of Ryan White services & ADAP by Kansas clients  
Overview of Unmet Need***

## *Ryan White Services in Kansas Section Highlights*

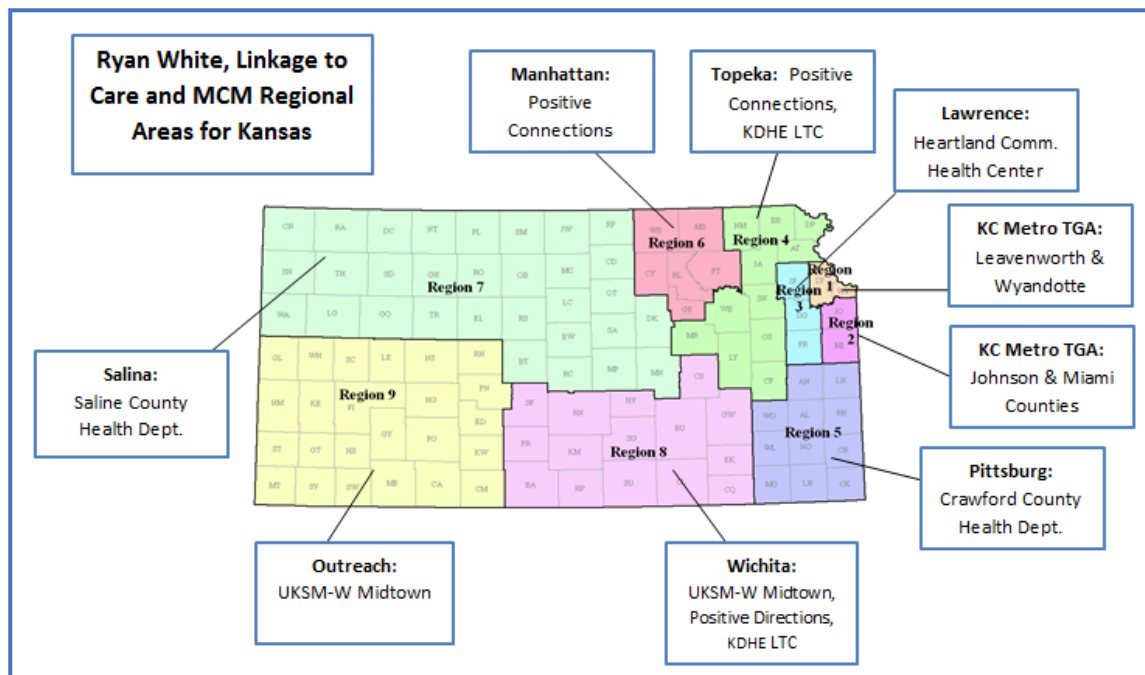
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- The state of Kansas provides Ryan White Part B and ADAP services for eligible HIV-positive persons living in the state of Kansas. HIV-positive persons living in the TGA, Kansas City, receive funding from Ryan White Part A.
- The majority of people living with HIV (PLWH) are male, non-Hispanic White, men who have sex with men (MSM), and between 40 and 59 years of age.
- On average 45% of Ryan White clients need some assistance financially.

## Overview of Ryan White & ADAP

In 1990, Congress enacted the Ryan White Comprehensive AIDS Resources Emergency (CARE) Act to provide assistance to HIV-positive persons. Those under Ryan White can access HIV-related medical services, medical insurance and other social support. Funding for the Ryan White CARE Act is administered by the Health Resources and Services Administration (HRSA), and is distributed by the STI/HIV Care Program. Figure 164 shows the Ryan White Service areas for the state of Kansas. These regional areas also match up for Linkage to Care (LTC) and Medical Case Management (MCM) services that are offered through the Ryan White Part B funding streams.

**Figure 164: Ryan White, Linkage to Care, and MCM Regional Areas for Kansas**



Congress reauthorized the CARE Act in 1996, 2000, 2006, and 2009 to support funding for Parts A, B, C, and D, Special Projects of National Significance (SPNS), HIV/AIDS Education Training Centers and the Dental Reimbursement Program. The state of Kansas receives funding for Part B, and works with the Kansas City TGA metro area for Part A. The University of Kansas Medical Center in Wichita, Kansas accepts funding from Parts C, D and E to assist Kansans who are living with HIV/AIDS.

### **Ryan White Part A**

Part A provides emergency assistance to Transitional Grant Areas (TGAs) – population centers most severely affected by the epidemic. To be eligible as a TGA, an area must have at least 1,000 reported but fewer than 2,000 new Stage 3 (formerly known as AIDS) cases in the most recent 5 years.

Kansas has 4 counties that are included in the Kansas City TGA, which is administered by the Kansas City Missouri Health Department. Kansans that reside within the TGA are eligible for ADAP assistance under Part B, but all other Ryan White services are provided by Part A funding, and the selection and priority of these services is determined by the Kansas City TGA Planning Council – a collection of providers, consumers and community members that guide the Part A program in Kansas City.

### **Ryan White Part B**

Part B funding is provided by HRSA to improve the quality, availability, and organization of health care and support services for low-income individuals and families with, or infected by HIV disease. Funding is also available for low-income individuals to access pharmaceuticals through ADAP (see below).

The Part B Program, which includes the Kansas ADAP, serves as the payer of last resort for persons living with HIV (PLWH) who are uninsured or underinsured. Clients must be ineligible for all other resources, including Medicaid, before being enrolled. ADAP also assists individuals who are low income and have adequate insurance coverage but cannot cover the costs of their premiums, medication, copayments, and deductibles. In 2017, 971 Kansans received core medical and support services through the Ryan White Part B program and 1,240 persons were enrolled in ADAP services.

Kansas has seven service providers that serve all non-TGA counties of the state. Kansas has 9 regional areas where providers ensure that their clients have access to essential medical care and psychosocial support services such as case management, mental health services, emergency financial assistance, transportation services and stable housing.

### **AIDS Drugs Assistance Program (ADAP)**

Kansas' ADAP provides medication assistance (HIV-related prescription drugs) to uninsured and underinsured Kansas residents living with HIV, as well as premium assistance for insurance plans through the Affordable Care Act – when it can be shown that such assistance would represent a cost savings for ADAP. Insurance assistance is also available to insured persons living with HIV, helping low-income Kansans pay for their medication copayments/coinsurance, and deductibles. To qualify for ADAP assistance, individuals must make less than 400% of the Federal Poverty Level, live in Kansas, and be HIV-positive.

The ADAP is administered by KDHE and utilizes the Kansas Medicaid pharmacy network that distributes drugs to clients statewide.

### **Ryan White Part C**

The Part C Early Intervention Services Program funds comprehensive primary health care in an outpatient setting for people living with HIV. Dr. Sweet, working out of the University of Kansas School of Medicine, is the only Part C funding recipient for the state of Kansas. Part C is able to give persons living with HIV a more comprehensive medical care plan. Services provided include: primary care, oral care, outpatient mental health and substance abuse treatment, referrals for health and support services and laboratory work.

### **Ryan White Part D**

Also operated by Dr. Sweet's clinic at the University of Kansas School of Medicine in Wichita, is a Part D program providing additional assistance to women and youth (under the age of 24) living with HIV throughout Kansas. Due to medical care provided through Parts A, B, and C, the Part D staff are able to focus more of their efforts on support services like nutrition and mental health. Although the Part D staff are based in Wichita, Kansas, eligible clients can be referred for Part D services throughout the state by their Ryan White Medical Case Managers (MCMs), allowing them to access services in their own areas.

### **Ryan White Part F (AETC)**

The AIDS Education Training Center (AETC) in Kansas funds a single consultant through the University of Kansas School of Medicine in Wichita. This consultant provides education to medical providers in Kansas that do not specialize in HIV related care, but who may provide other health services to Kansans living with HIV. This education is primarily conducted through small, onsite workshops, but also provides occasional regional lectures on HIV related topics.

### **Housing Opportunities for Persons with AIDS (HOPWA)**

In Kansas, HOPWA is administered by a single sub-recipient agency: Kansas Care Through Housing (KCTH). The primary goals of KCTH are to prevent homelessness and provide long-term strategies for meeting the housing needs of persons living with HIV, and their families. KCTH is funded through a formulary grant from the United States Department of Housing and Urban Development (HUD) that is based on number of cumulative HIV cases reported to the CDC.

KCTH provides housing-related services in all areas of Kansas except Johnson, Miami, Wyandotte, Linn, and Leavenworth Counties. These five counties are supported by SAVE Inc. and ReStart. Both programs utilize funding from Shelter Plus Care and HOPWA, in addition to other resources.

KCTH resources are used in conjunction with Federal, State, local, and private funding sources, including Ryan White. Assistance is based on fair market rents for the region and KCTH availability to assist with rent, mortgage payments, utilities and other housing-specific support deemed essential to prevent homelessness.

### **Linkage-to-Care (LTC)**

The Linkage-to Care (LTC) Program is a standard service to navigate HIV-positive individuals through care once they know their HIV positive result. The primary goal of LTC is to link the newly diagnosed individual into medical care. Delays in seeking medical care have implications both for treatment and prognosis of HIV-infected patients, and for the further propagation of the epidemic. In recognition of this problem, LTC is the primary prevention/care model that is utilized to link HIV-infected persons to appropriate medical care, prevention services, local resources and treatment soon after testing HIV positive.

### **Comprehensive Risk Counseling Services (CRCS)**

Due to limited funding, KDHE funds one Comprehensive Risk Counseling Services (CRCS) provider position. To improve efficiency, the CRCS provider covers only the most populous part of the state. The CRCS provider, a clinical licensed social worker, works with clients on sexual and substance related risk behaviors and assist

clients with mental and substance abuse issues. DIS, LTC, and MCM providers conduct risk assessments with their clients, and if risk behaviors are identified, will make a referral to the KDHE CRCS program. The CRCS provider follows up with clients referred from other programs to determine if the cases are appropriate for CRCS and, if a case is determined to be appropriate, the client is enrolled in CRCS. The CRCS program offers short-term client-level prevention counseling to high-risk HIV-positive and HIV-negative people. CRCS services are offered in a client-centered approach – the client works with the CRCS provider to develop a risk reduction plan and the client determines where the sessions will take place. Frequently clients request to meet in their homes or comfortable public venues such as coffee shops or restaurants. Clients may meet with the CRCS provider for up to twelve sessions and generally sessions last for at least an hour and occur every other week. The CRCS provider carries a caseload of about 15 clients at a time. Clients may reenroll in the program if needed.

# Characteristics of Ryan White Clients in Kansas

Kansas is a stable state in terms of trend analysis and scope of the HIV epidemic. The following graphs and tables will be similar to the trend analysis conducted for HIV-positive persons living in the state of Kansas. Please review the overall state trend analysis, please refer to Section Two of this publication.

Smaller numbers mean that rates, proportions, and analysis are statistically unstable, so conclusions drawn are more likely to be erroneous. Changes from one year or group of years may reflect true changes, but are more likely the result of normal variations that present as large changes with smaller numbers.

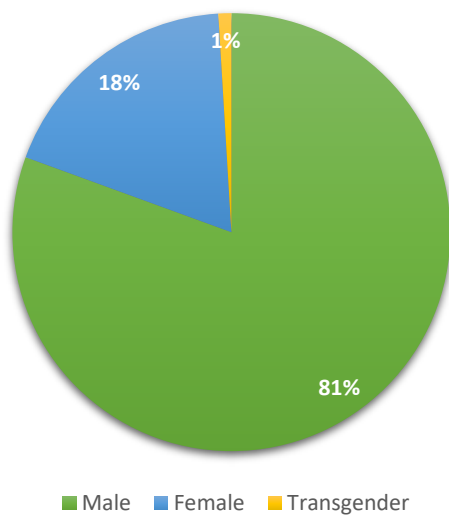
## Demographic Analysis of Ryan White clients living in Kansas by Gender, Race/Ethnicity and Age

### Gender

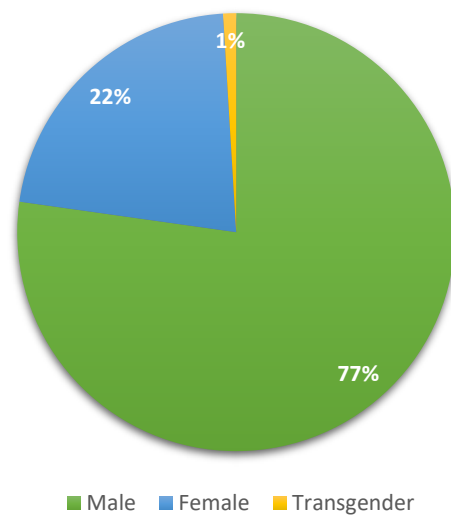
Figure 165 displays prevalence comparisons for all HIV-positive people in the state of Kansas and those who are engaged in utilizing Ryan White services. The pie chart on the left displays the HIV-positive population for the state of Kansas by gender. As discussed in section two, 81% of the Kansas epidemic is male. By December 31, 2017, 77% of Ryan White clients were male, 22% female, and 1% transgender.

**Figure 165: Kansas HIV-Positive Prevalence vs. Kansas Ryan White Prevalence by Gender, December 31, 2017**

**Kansas HIV Prevalence by Gender**



**Kansas Ryan White Prevalence by Gender**

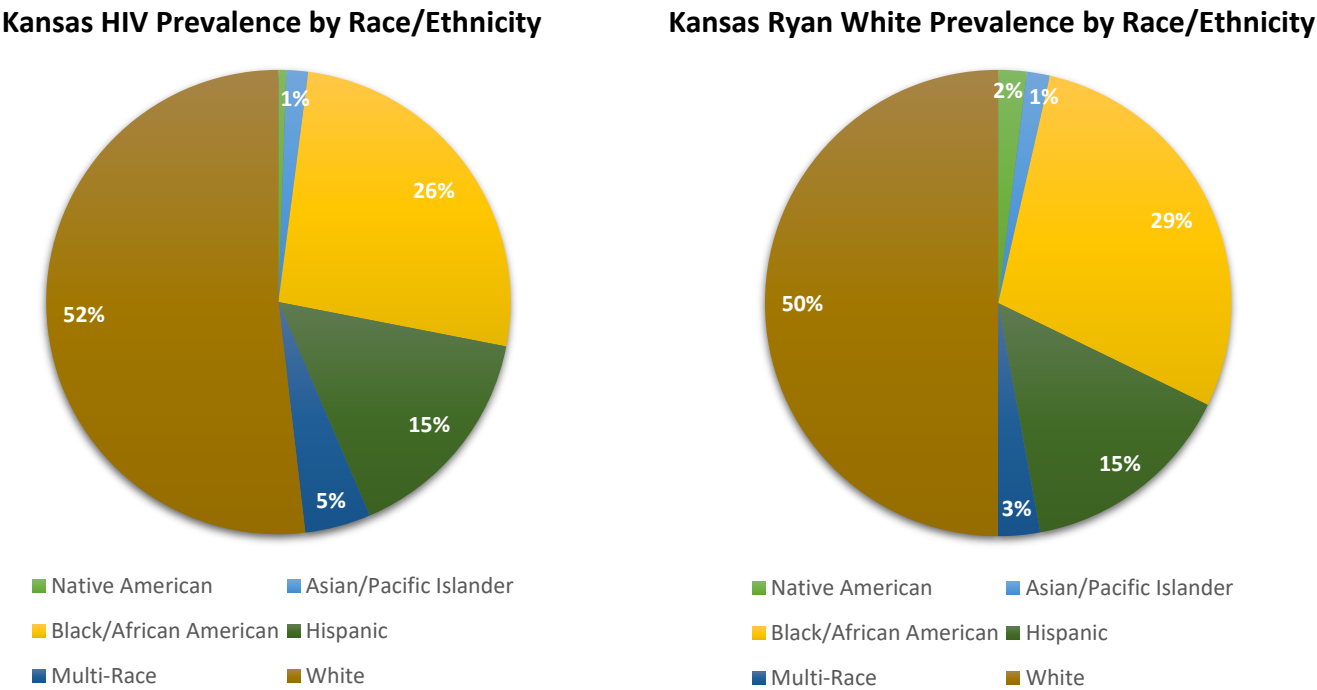


### Race/Ethnicity

Figure 166 displays a comparison of the state of Kansas HIV-population prevalence by race/ethnicity and Kansas Ryan White clients, as of December 31, 2017. This figure will appear slightly different than Figure 164. Figure 164 found in section two, compared the race/ethnicity of the Kansas general population and the HIV-positive population. This graph was drawn from the Care database, SCOUT, and does not collect the variable 'two+ races'

or anything similar to this. Due to this data anomaly the left Pie Chart (Kansas HIV Prevalence) appears not to add up to 100%. That is because 1% of the data is represented by “two+ races” and could not be matched from the data from SCOUT. Despite this minor setback, analysis of the two bars in the graph indicate how similar the two population comparisons are.

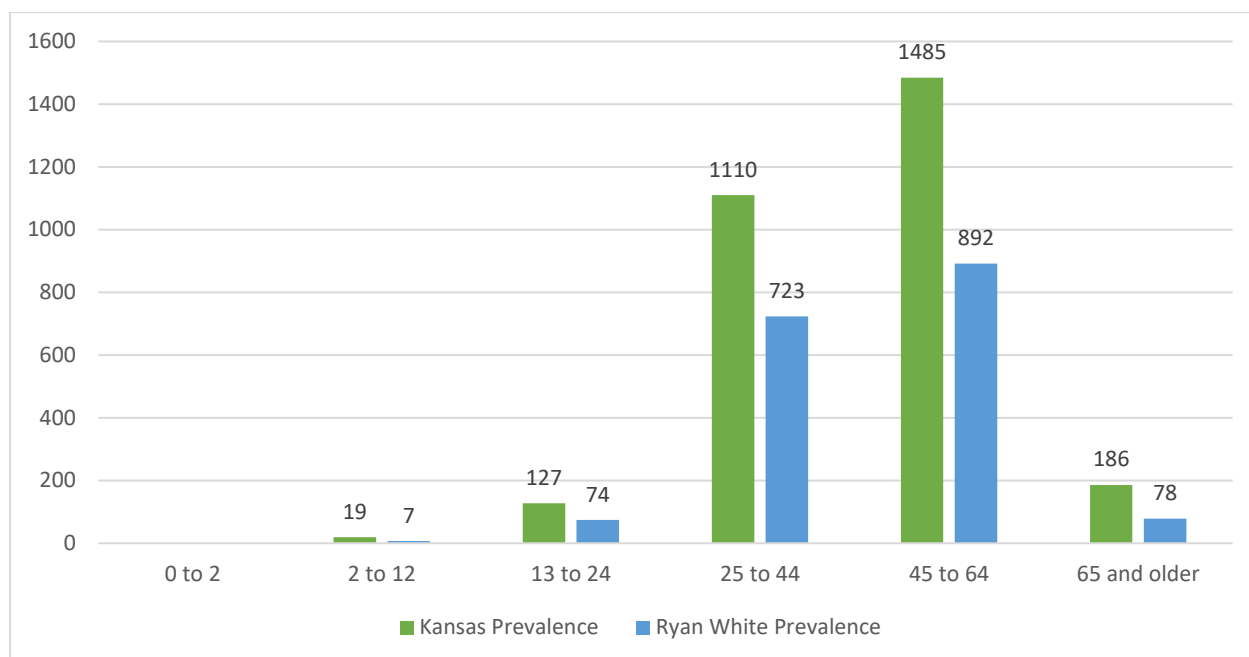
**Figure 166: Kansas HIV-Positive Prevalence vs. Kansas Ryan White Prevalence  
by Race/Ethnicity, December 31, 2017**



### Age

Figure 167 displays the Kansas HIV-positive population in comparison to the Kansas Ryan White population by age. Overall Ryan White clients follow the same trend as the Kansas Prevalence. The 45 to 64 age group has the highest number of HIV-positive individuals followed by the 25 to 44 age group. Many people test positive initially in the younger age group, but are growing older and staying alive longer. HIV-positive persons who are 65 years of age and older, will likely receive assistance with their copayments, medications, and deductibles from Medicaid, rather than the Ryan White program.

**Figure 167: Kansas HIV-Positive Prevalence vs. Kansas Ryan White Prevalence  
by Age Group, December 31, 2017**



### *Economic Indicators for Part B Support Service Clients*

All the tables identified in the following sections will have Regions 1 and 2 combined. These two regions are a part of the TGA and receive funding through the Kansas City Missouri Health Department by both Ryan White Part A and B programs. The rest of Kansas (regions 3-9) receive funding through KDHE by the Ryan White Part B program. The tables below (Tables 18, 19, and 20) represent HIV-positive Kansas residents who had a documented encounter indicating active service enrollment between the dates of January 1, 2017 and December 31, 2017.

### **Income Levels**

Table 45 displays income brackets for Ryan White clients in the state of Kansas broken down by HIV regional groups. Ryan White is a payer of last resort, and is designed to help low-income, uninsured, or underinsured HIV-positive persons living in Kansas. The STI/HIV Care program determines eligibility at time of enrollment and at bi-annual renewals, including whether a client meets the income requirement. To be eligible for Ryan White funding, a client must be at or below 400% of the federal poverty level (FPL).

Every region, including the TGA, has 'equal to or below FPL' as the highest-ranking group of income levels. This demonstrates that on average 45% of Ryan White clients need some assistance financially, but are not completely dependent on the Ryan White program for medical care, access, and medications.

**Table 45: Economic Indicators for Part B Ryan White Clients, Income Levels by Region, December 31, 2017**

| <i>Income Level</i>                 | <b>TGA</b> | <b>Region 3</b> | <b>Region 4</b> | <b>Region 5</b> | <b>Region 6</b> | <b>Region 7</b> | <b>Region 8</b> | <b>Region 9</b> |
|-------------------------------------|------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| <b><i>Equal to or Below FPL</i></b> | 40.7%      | 40.3%           | 56.0%           | 50.8%           | 46.0%           | 44.1%           | 52.0%           | 47.9%           |
| <b><i>101-200% FPL</i></b>          | 32.1%      | 28.3%           | 21.1%           | 33.3%           | 32.0%           | 31.4%           | 27.6%           | 20.8%           |
| <b><i>201-300% FPL</i></b>          | 22.9%      | 20.8%           | 13.7%           | 7.9%            | 14.0%           | 16.7%           | 13.7%           | 18.8%           |
| <b><i>301-400% FPL</i></b>          | 3.0%       | 3.8%            | 7.4%            | 3.2%            | 8.0%            | 6.9%            | 5.2%            | 8.3%            |
| <b><i>&gt; 400% FPL</i></b>         | 1.3%       | 1.9%            | 1.7%            | 4.8%            | 0.0%            | 1.0%            | 1.5%            | 4.2%            |

### **Medical Insurance**

Table 46 displays the utilization of medical insurances of Ryan White clients throughout the state. There are a few important things to note with this table. The first is that a client might utilize more than one insurance. For example, a client might use an employer-based insurance, but need to supplement this insurance with use of Medicare/Medicaid. The SCOUT database was not implemented until 2011. The previous database had incomplete insurance information which accounts for the high percentages of “Unknown/Not Reported” insurance.

**Table 46: Economic Indicators for Part B Ryan White Clients, Medical Insurance by Region, December 31, 2017**

| <i>Medical Insurance</i>                     | <b>TGA</b> | <b>Region 3</b> | <b>Region 4</b> | <b>Region 5</b> | <b>Region 6</b> | <b>Region 7</b> | <b>Region 8</b> | <b>Region 9</b> |
|--|------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| <b><i>Employer Insurance</i></b>             | 21.6%      | 26.4%           | 14.9%           | 11.1%           | 28.0%           | 17.6%           | 18.1%           | 31.3%           |
| <b><i>Private-Pay Insurance</i></b>          | 34.7%      | 22.6%           | 32.0%           | 19.0%           | 28.0%           | 24.5%           | 27.6%           | 29.2%           |
| <b><i>Medicare</i></b>                       | 17.3%      | 28.3%           | 28.6%           | 38.1%           | 24.0%           | 33.3%           | 29.3%           | 16.7%           |
| <b><i>Medicaid</i></b>                       | 13.5%      | 28.3%           | 29.1%           | 49.2%           | 26.0%           | 33.3%           | 27.7%           | 18.8%           |
| <b><i>Other Public Provider</i></b>          | 0.4%       | 0.0%            | 0.0%            | 0.0%            | 0.0%            | 0.0%            | 0.0%            | 0.0%            |
| <b><i>Other Public Benefits</i></b>          | 1.9%       | 3.8%            | 3.4%            | 0.0%            | 4.0%            | 3.9%            | 2.5%            | 0.0%            |
| <b><i>No Public or Private Insurance</i></b> | 19.3%      | 9.4%            | 7.4%            | 11.1%           | 2.0%            | 4.9%            | 10.9%           | 16.7%           |
| <b><i>Unknown/Not Reported</i></b>           | 3.9%       | 7.5%            | 2.9%            | 1.6%            | 2.0%            | 2.9%            | 2.3%            | 0.0%            |

### **Living Arrangement**

Table 47 displays the regional breakdown of living arrangements for Ryan White clients. The goal of programs like HOPWA is to have all HIV-positive persons in a permanent housing situation. This way a client can focus on being healthy and adhering to their treatment protocols rather than worry about housing.

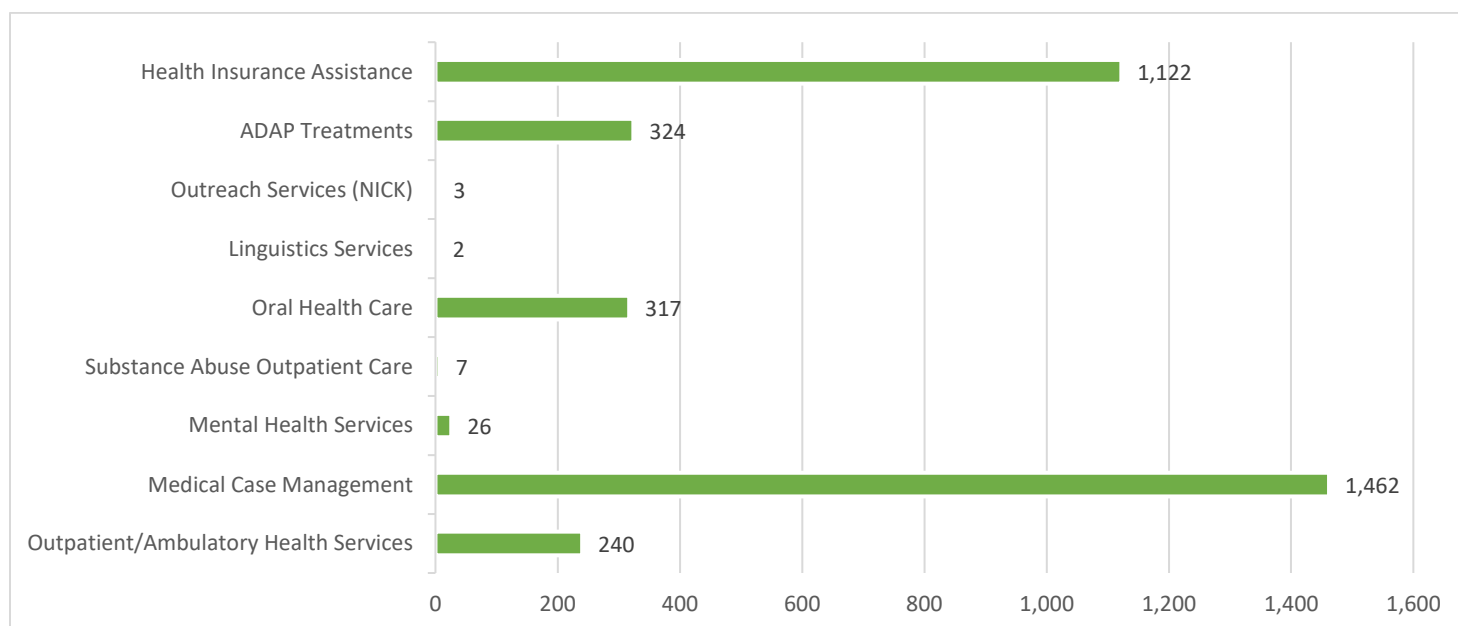
**Table 47: Economic Indicators for Part B Ryan White Clients, Living Arrangements by Region, December 31, 2017**

| <b>Living Arrangement</b>    | <b>TGA</b> | <b>Region 3</b> | <b>Region 4</b> | <b>Region 5</b> | <b>Region 6</b> | <b>Region 7</b> | <b>Region 8</b> | <b>Region 9</b> |
|------------------------------|------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| <b>Permanent Housing</b>     | 90.6%      | 98.1%           | 73.7%           | 96.8%           | 98.0%           | 94.1%           | 91.6%           | 95.8%           |
| <b>Non-Permanent Housing</b> | 6.4%       | 0.0%            | 1.1%            | 0.0%            | 0.0%            | 1.0%            | 2.4%            | 0.0%            |
| <b>Institution</b>           | 0.4%       | 0.0%            | 0.0%            | 0.0%            | 0.0%            | 2.0%            | 0.1%            | 0.0%            |
| <b>Homeless</b>              | 1.3%       | 1.9%            | 4.6%            | 3.2%            | 2.0%            | 1.0%            | 4.4%            | 4.2%            |
| <b>Other</b>                 | 1.1%       | 0.0%            | 20.6%           | 0.0%            | 0.0%            | 2.0%            | 1.5%            | 0.0%            |

### **Ryan White Service Utilization**

Ryan White eligible clients residing in Kansas can utilize many services including outpatient medical care, dental care, health insurance assistance, MCM, transportation services, housing (HOPWA), mental health (including CRCS), ADAP treatments, and nutritional therapy. Figure 168 displays a chart of the services provided to eligible Kansas residents and the number of clients served. In Kansas, Health Insurance Assistance and MCM are the two services that almost all Ryan White clients utilize.

**Figure 168: Ryan White Part B Services Utilized, December 31, 2017**



## *Part 6: Appendices*

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*Glossary*  
*References*

## *Glossary*

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AIDS Case: Diagnosed with the immune system of a person infected with HIV becomes severely compromised (measured by CD4 cell count) and/or the person becomes ill with an opportunistic infection. In the absence of treatment, AIDS usually develops 8-10 years after initial infection; with early HIV diagnosis and treatment, this may be delayed by many years.

CD4+ T Cells: This is a white blood cell with CD4 molecules on its surface. These cells play an important role in the human immune system. Sometimes referred to as “helper” cells, they orchestrate the body’s response to certain microorganisms such as viruses. HIV virus particles attach and utilize these cells to multiply.

Date of Diagnosis: The date a laboratory/provider makes a diagnosis based on the chemical analysis of a specimen.

Epidemic: The occurrence in a community or region of cases of an illness, behavior or health-related events clearly in excess of “normal expectancy”.

Estimated Diagnosis of Infection: HIV, AIDS and Death data provide trends of the burden of disease and are useful for tracking the time from a diagnosis of HIV infection to diagnosis of AIDS or to death. Discrepancies between populations in the time from HIV infection diagnosis to AIDS diagnosis / time to death underscore inequities in access to testing and care; this knowledge can help direct resource allocation.

HAART – Highly Active Anti-retroviral Therapy: This is a treatment protocol using a combination of anti-retroviral drugs to suppress the HIV virus. These drugs consist of four basic classes depending on their method of suppression: reverse transcriptase (RT) inhibitors, protease inhibitors (PI), fusion inhibitors, and integrase inhibitors.

Heterosexual Contact: (Transmission Category) Persons whose transmission category is classified as heterosexual contact are persons who noted heterosexual contact with a person known to have or be at high risk for HIV infection. (I.E. IDU, MSM)

HIV Case: This refers to an individual who has been infected with the Human Immunodeficiency Virus that is in the early stages of the disease process and has not met the case definition for AIDS.

HIV Disease Case: This includes all individuals who have been infected with HIV/AIDS.

Incidence: Number of new cases of HIV or AIDS divided by the population at that specific time.

Incidence Rate: A measure of the frequency with which new cases of HIV/AIDS occurs, expressed explicitly per a time frame. Incidence rate is calculated as the number of new cases over a specified period divided either by the average population.

IDU - Injection Drug Use: (Transmission Category) Persons whose transmission category is classified as IDU are persons noted receiving an injection, either self-administered or given by another person, or a drug that was not prescribed by a doctor for this person. The drug itself is not the source of the HIV infection, but rather the sharing of syringes or other IDU equipment.

MSM – Men who have sex with men: (Transmission Category) Persons whose transmission category is classified as male-to-male sexual contact.

MSM/IDU – Men who have sex with men & injection drug use: (Transmission Category) Persons whose transmission category is classified as MSM and IDU include men who noted injecting drugs as well as sexual contact with other men.

Percentage: A proportion of the whole, in which the whole is 100.

Persons living with a diagnosis of HIV infection or AIDS: This term denotes the number of persons living in Kansas who have received a diagnosis of HIV infection and/or AIDS and are still alive.

Place of Residence: Data are presented based on an individual's residence at time of most recent diagnosis of HIV/AIDS. Only cases whose residence at most recent diagnosis was in Kansas are included in the analyses presented in this document. This may or may not correspond with the individual's residence at the time of initial infection.

Point Prevalence: The number of persons living with HIV/AIDS at a given point in time. December 31<sup>st</sup> is used for this document to calculate the number of persons living with HIV/AIDS for each year.

Prevalence: The number of persons/cases living with HIV/AIDS divided by the population of that specific time.

Prevalence Rate: The proportion of a population that has HIV/AIDS at a specified point in time or during a specified time period.

Proportion: A portion of a population or a data set, usually expressed as a decimal fraction (I.E. 0.2), a fraction (I.E. 1/5) or a percentage of the population (20%).

Rate: The proportion of people with HIV or AIDS over a specific time period.

Reporting Delay: Delays exist between the time HIV infection is diagnosed and the time the infection is reported to KDHE. As a result of reporting delays, case numbers for the most recent years of diagnosis may not be complete. Data from recent years should be considered provisional.

(RIDR) - Routine Interstate Duplicate Review: The mobility of American citizens impacts the ability to accurately track individuals living with HIV/AIDS. Mobility may result in the same HIV infected person being counted in two or more different states. To help respond to potential duplication problems, the CDC initiated the Interstate Duplication Evaluation Project (IDEP), now called Routine Interstate Duplicate Review (RIDR) in 2002. RIDR compares client records throughout the nation in order to identify duplicate cases. The states with duplicate cases contact one another to compare client profiles in order to determine the state to which the case “belongs to” based on residence during the earliest date of diagnosis.

Risk Factor: An aspect of a personal behavior and environmental exposure, or an inborn or inherited characteristic that is associated with an increased occurrence of disease.

Small Numbers: Data release limitations are set to ensure that the information cannot be used to inadvertently identify an individual. It is difficult to make meaningful statements concerning trends in areas with low numbers of cases.

STI – Sexually Transmitted Infections: STIs previously called Venereal Disease, are among the most common infectious disease in the United States today. They are a group of infections that are predominantly transmitted through sexual activity. These include: HIV/AIDS, Chlamydia, Gonorrhea, and Syphilis.

Stages of Disease: In April 2014, CDC published an MMWR named “*Revised Surveillance Case Definition for HIV Infection – United States, 2014*” with updated stages and guidelines for diagnosing HIV/AIDS. The surveillance case definitions for HIV infection and AIDS were revised into a single case definition for HIV infection that includes AIDS and incorporates the HIV infection staging classifications.

Children aged 18 months to <13 years are now classified for both HIV/AIDS.

Stages:

- Stage 0: Acute HIV Infection – client must have had a negative or indeterminate result within the 180 prior to first positive result.
- Stage 1: HIV Infection – No AIDS-defining conditions and a CD4+ T-Lymphocyte count of >500 cells/uL.
- Stage 2: HIV Infection – No AIDS-defining conditions and a CD4+ T-Lymphocyte count of 200-499.
- Stage 3: AIDS – CD4+ T-Lymphocyte count <200 cells/uL or documentation of an AIDS-defining condition.
- HIV Infection: Unknown – No information available on CD4+ T-Lymphocyte cell count and no information available on AIDS-defining conditions.

Surveillance: The ongoing, systemic observation of a population for rapid and accurate detection in the occurrence of HIV/AIDS.

Transmission Category: The term for summarizing the multiple risk factors that a person may have had by selecting the one most likely to have resulted in HIV transmission.

Unmet Need: The need for HIV –related health services by individuals with HIV who are aware of their status, but are not receiving regular primary health care.

Vital Status: Cases are presumed to be alive unless the STI/HIV Surveillance Program has received notification of death. Current vital information for cases is ascertained through routine matches with KDHE Office of Vital Statistics, reports from other jurisdiction surveillance programs and through national organizations such as the National Death Index (NDI) and the Social Security Death Master File (SSDMF).

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